

# STUDIES ON THE ACRIDOID GENERA OPIPTACRIS WALKER AND BUMACRIS WILLEMSE (ORTHOPTERA, ACRIDOIDEA)

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## ABSTRACT

The genus *Opiptacris* is redefined. A striking contrast between a great variety of distinct colour-patterns and fewer, less conspicuous, morphological characters has been found. More than 20 taxa are recognized; if based on morphological characters these are given the rank of species, if based on colour the status of subspecies. *O. pictipennis* is removed from the genus, and its original combination, *Cranae pictipennis* C. Willemse, re-established; *O. salomona* Ramme is synonymized with *O. bougainvillea* Ramme; *O. atriceps* and *O. signata*, both C. Willemse, are synonymized with *O. ruficeps* C. Willemse; *O. georgica* C. Willemse is considered a subspecies of *O. uniformis* C. Willemse; *O. signata tulagii* Uvarov is given specific rank. The following species and subspecies are described as new: *O. tenuis*, *O. novageorgica*, *O. vellalavellae*, *O. choiseulensis*, *O. unicolor*, *O. alata*, and *O. ruficeps aberrans*, *O. uniformis cephalica*, *O. uniformis tricolor*, *O. uniformis bicolor*, *O. uniformis striata*, *O. bougainvillea femorata*, *O. bougainvillea fauroensis*.

The genus *Bumacris* is redescribed, and two subgenera are distinguished, viz., *Bumacris* and *Cristovalacris* subgen. nov. *Cristovalacris* occurs with one species, *venosa* spec. nov., on San Cristoval; nominate *Bumacris* is represented with six species and two subspecies on most other islands of the Solomon Islands. *B. georgica* C. Willemse is synonymized with *B. leverii* Uvarov. The following taxa are described as new: *B. rendovae* sp. n., *B. pagdeni mundae* ssp.n. and *B. pagdeni kolombangarae* ssp.n. Keys to the taxa within the genus are given.

## INTRODUCTION AND ACKNOWLEDGEMENTS

Most species of the two genera treated in the present paper had been described after one or a few specimens, and were known from one sex only. A rich material, received from the Bernice P. Bishop Museum and the British Museum (Natural History), allowed for a revision of the two taxa.

In the course of this study types and other material have been borrowed from the following institutions (abbreviations as used in the text):

ANSP, Academy of Natural Sciences, Philadelphia  
BMNH, British Museum (Natural History), London  
BPBM, Bernice P. Bishop Museum, Honolulu  
MNHN, Muséum National d'Histoire Naturelle, Paris  
NMB, Naturhistorisches Museum, Basel  
NMM, Natuurhistorisch Museum, Maastricht  
NMW, Naturhistorisches Museum, Wien  
RMNH, Rijksmuseum van Natuurlijke Historie, Leiden  
ZMHU, Zoologisches Museum, Humboldt-Universität, Berlin  
(presently Museum für Naturkunde)

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All measurements in the text are given in millimetres.

### *Opiptacris* Walker, 1870

*Opiptacris* Walker, 1870: 650; Kirby, 1910: 387; C. Bolívar, 1932: 394; Uvarov, 1937: 17; Ramme, 1941: 92; C. Willemse, 1956: 6, 90; Kevan, 1966: 407.

*Salomonacris* C. Willemse, 1931: 336; Uvarov, 1937: 17; C. Willemse, 1956: 91; Kevan, 1966: 407; F. Willemse, 1966a: 41.

Type species: *Opiptacris bilaris* Walker, 1870.

The genus *Opiptacris* was described by Walker, 1870, and based on a single species, *O. bilaris* Walker, 1870. Up to now, nine species and one subspecies have been distinguished. Material was always very scarce and the taxa were described after one or a few specimens. The number of localities represented in the new material from the Bernice P. Bishop Museum and the British Museum (Natural History) is considerable (54): two occur in the Bismarck Archipelago, the others are scattered all over the Solomon Islands. After the specimens were sorted according to locality, and these again arranged according to geographical position, the following results became evident.

There is a great variety of colour patterns, which are very constant and clearly distinct from each other. Transitions are not seen. Furthermore, each pattern is typical for a definite locality or a group of adjacent localities. In contrast to this diversity in colour, the morphology is comparatively uniform. On the basis of a few minor morphological differences, the material can be arranged into several groups. The area of such a group covers a definite, contiguous part of the range of the genus. The number of morphologically defined groups is much lower than that of distinct colour patterns. Sympatric occurrences of forms, distinct either morphologically or in coloration, are not seen in the available material, but the possibility cannot be excluded.

In *Opiptacris*, apterism and the occurrence on islands act as isolating mechanisms. The sexual dichromatism of some populations might indicate that colour is an additional isolating factor. However, any actual information on reproductive isolation is lacking. It will be understood that a taxonomic treatment of such a complex is subject to a considerable amount of uncertainty.

Although the results will not always be convincing, I have tried to classify the material by adopting two principles, viz., (1) assigning populations to the category of a species on the basis of morphological characters, and (2) within such a morphological concept assigning populations to the category of a subspecies on the basis of differences in colour pattern. As to (1), it should be pointed out that morphological distinction often is quite difficult. As to (2), the stable, well-defined and conspicuously developed diversity in coloration, is considered an indication of a fundamental, genetical basis. Therefore, the present study should be taken primarily as a formal recognition of taxa within the

*Opiptacris*-complex. The second step in classification, the categorial ranking of these taxa, cannot be carried out yet.

### Redescription.

♂ ♀. Body of medium size, cylindrical. Integument shiny, almost smooth, pronotum slightly pitted, face wrinkled, the occiput, on each side, with a row of slight transverse impressions. Antennae filiform, segments up to five times as long as wide, the tip reaching about middle of hind femur. Head thick and round, as long as, or a little longer or shorter than the pronotum. Eyes ovoid-hemispherical, more or less prominent, interocular distance usually narrower than the greatest width of the fastigium verticis. Fastigium verticis at a lower level and marked off from the rest of the vertex; from above triangular, the rounded margins converging towards the parabolic or truncate apex, which does not exceed the antennal scape; in profile subhorizontal, more or less declivous anteriorly and meeting the frontal ridge about rectangularly. Frons slightly reclinate; frontal ridge present only above median ocellus, margins obtuse and nearly parallel. Lateral facial keels straight, low and divergent. Occiput and genae convex.

Pronotum cylindrical, without keels, in the middle not or slightly compressed laterally. From above, anterior margin slightly rounded, posterior margin truncate or, usually, slightly concave. Four deep transverse sulci; first (submarginal), third and fourth (typical) both on dorsum as well as on lateral lobes; the second one only on dorsum. The distance between the fourth and third sulci is the greatest, being about one-fourth of the pronotal length; distance between first sulcus and anterior margin the smallest, about one-sixth of the pronotal length; distances between first and second sulci, the second and third sulci, and the fourth sulcus and posterior margin of pronotum, approximately equal. Lateral lobe about as long as high, usually slightly longer; deepest point of lower margin at level of third sulcus, from here the lower margin is convex posteriorly, concave anteriorly; anterior edge obtuse-angulate, posterior edge rounded or slightly projecting posteriorly; anterior margin straight, posterior margin slightly concave, both margins divergent dorsally. Mesonotum about two-thirds the length of metanotum, more or less covered by the pronotum. Metanotum about as long as the distance between anterior margin and second sulcus of pronotum. Prosternal tubercle strong, vertical, transverse, apex widened laterally and truncate ventrally. Mesosternal lobes about as long as wide, inner margins convex, their interspace a little narrower than a lobe. Metasternal interspace about triangular.

Tegmina vestigial. Elytron reaching hind margin of metanotum or shorter, ranging from elongate-elliptical to almost circular, partly or completely sclerotized. Hind wing a narrow, membranous suture. Tympanum not distinct, indicated as a narrow, weak furrow. Legs short and robust. Hind femur as long as abdomen in male, slightly shorter in female, fish-bone pattern strong, keels obtuse, lower inner keel pilose, upper keel terminating into an obtuse point. Knee-lobes broadly rounded or slightly truncate. Brunner's organ present. Hind tibia shorter than hind femur, slightly widened distally, margins obtuse and pilose, spines strong, seven inner and five or six outer spines, the apical spines included. Hind tarsus pilose, about two-thirds of tibial length, first and second segments of equal length, third segment slightly longer than second segment. Claws and pulvillus strong.

♂. Hind margin of last abdominal tergite (Fig. 1) excised medially, with small,

triangular, pointed furculae laterally. Supra-anal plate (Fig. 1) slightly wider than long, roughly triangular, apex obtuse, lateral margin thickened, near base with slight, transverse impression or ridge. Cercus (Fig. 2) slender, slightly upcurved, its pointed apex reaching just beyond the tip of the supra-anal plate. Subgenital plate subconical, short, apex obtuse.

Phallic complex (Fig. 3—9). Epiphallus bridge-shaped; ancorae small and situated rather laterally; inner lophi small and tooth-shaped, outer lophi large and hook-shaped and slightly recurved. Ectophallic membrane with pair of dorsal, weak sclerites of irregular shape. Cingulum with horseshoe-shaped apodemal structure and lateral rami, extending ventro- and dorso-posteriorly. Between the cingular zygoma and the upper margin of the rami, a central ectophallic membrane, to which is attached the arch of cingulum. The cingular valves are upcurved, short, not extending into the phallotreme. Basal penis valve with narrow gonopore process and wide lateral expansion. Apical penis valve upcurved. Apex of phallus roughly conical, tip of apical penis valves slightly out- and recurved, connected laterally with the sheath of penis.

♀. Last abdominal tergite with hind margin widely and triangularly excised. Supra-anal plate twice as long as wide, tongue-like, apex narrowly parabolic. Cerci conical, short, not reaching tip of supra-anal plate, slightly outcurved. Subgenital plate (Fig. 10) twice as long as wide, hind margin widely rounded laterally, triangularly produced medially; ventral side on each side with a short, low, obtuse keel reaching hind margin. Ovipositor valves (Fig. 10—11) slender, straight, margins finely serrate, almost smooth. Lateral basivalvular sclerite elongate-triangular, ventral basivalvular sclerite three to four times as long as wide. Dorsal side of subgenital plate (Fig. 12) with pair of simple, round columellae. Spermatheca (Fig. 13) with an apical diverticulum and a wider, strongly curved, preapical diverticulum.

Coloration conspicuously different in the various taxa (Pl. 1—3 Fig. 1—32). Sexual dichromatism ranges from slight to strong. With few exceptions, no strong dichromatism between juvenile and adult stages is present. There are several kinds of what superficially may be called 'black'. Apart from jet-black, there is black with a distinct shade of blue, orange, red, or brown. Of practical use is the observation that 'black' with a shade of orange, red, or blue in adult specimens, corresponds to a distinct orange, red or blue pigmentation in juveniles.

To avoid lengthy descriptions, the following features, similar in all species and sub-species of the genus, are summarized here: eye colour varies individually from yellowish to dark brown; scape and pedicel of antenna are of the same colour as the face; mouth-parts and face are coloured similarly or are partly black, but the upper lateral clypeal angle and apical part of the mandible are always dark brown or black; the crescents of the hind knee are dark castaneous brown; in the male the tip of the spines of the hind tibia, the claws and the furculae are black.

Distribution. The genus is distributed throughout the Papuan subregion, but mainly over the Solomon Islands.

#### Discussion.

As pointed out by Kevan (1966), the distinction of *Salomonacris* C. Willemse, 1931, cannot be accepted, as complete apterism does not occur. Its synonymy with *Opiptacris* is now established.



The genus *Opiptacris*, in the present concept, is a natural grouping of populations, closely related to *Cranae* Stål, 1878. Provisionally, these two genera are referred to the subfamily Catantopinae.

Among *Opiptacris*, nine species and one subspecies were distinguished. One of the species included is *O. pictipennis* (C. Willemse, 1932). Originally described under *Cranae*, it was transferred to *Opiptacris* by Uvarov (1937). An examination of the type series (RMNH & NMM) reveals that the relationship to *Cranae* is much closer than to *Opiptacris*. The strongly pitted integument, smaller eyes, less cylindrical pronotum, larger elytra and especially the male phallic complex agree with *Cranae* rather than with *Opiptacris*. Therefore, I propose to re-establish the original combination *Cranae pictipennis*.

In the present study, *O. atriceps* (C. Willemse, 1931) and *O. signata* (C. Willemse, 1935) are synonymized with *O. ruficeps* (C. Willemse, 1931); *O. salomona* Ramme, 1941, with *O. bougainvillea* Ramme, 1941; *O. georgica* C. Willemse, 1956, is considered a subspecies of *O. uniformis* C. Willemse, 1956, and *O. signata tulagii* Uvarov, 1937, is given full specific rank. Among the material on hand, 12 species, eight additional subspecies and one unnamed species are distinguished.

As to the morphology, the *Opiptacris*-complex is noted for a remarkable scarcity of taxonomically useful characters. The external and internal male and female genitalia appear rather uniform. Slight differences in the phallic complex between populations may be due to variation and are difficult to evaluate. A more reliable character is found in the elytra: their size, form, and degree of sclerotization. Other morphological characters of some taxonomic importance are the following: general appearance, form of head, prominence of the eyes, width of the interocular distance, shape of the fastigium verticis, form and length of the pronotum, and depth of the transverse sulci. It must be pointed out that the reliability of these features depends much upon the size of the sample of the population. Whenever possible, series of specimens should be compared. In view of the greatly similar morphology, lengthy descriptions of the morphological characters of the taxa are omitted.

As to the conspicuous differences in colour, reference is made to what has been said in the introduction.

In the absence of much basic information on the genus, little can be said on specific groupings. Only the following general observations can be made, using the elytra as a guide. Two groups occur on the periphery of the range of the genus. A northwestern group, represented by *alata* spec. nov. and *castanea* Kevan, from the Bismarck Archipelago, has the largest elytra. A southeastern group, *ruficeps ruficeps* C. Willemse and *ruficeps aberrans* subsec. nov., from Malaita I., has the smallest elytra. In the other species the size of the elytra is intermediate between these two peripheral groups. They are also geographically intermediate, occurring between the Bismarck Archipelago and Malaita I. (except *bilaris* Walker, described in 1870 after a single male from the New Hebrides, a record never since confirmed). Among the latter, intermediate, group a distinction can be made between the species occurring on the New Georgia Is. (*novageorgica* spec. nov. and *vellalavellae* spec. nov.) and those occurring on Guadalcanal I. in the south to Bougainville I. in the north. The former species have the elytra strongly sclerotized, and almost circular, while the elytra in the latter species are less sclerotized and elongate-elliptical. As to colour a grouping of the species appears of little use.

As stated above, morphological distinction of the taxa is quite difficult. Besides, some

species were described after discoloured material, others are known in one sex only (sexual dichromatism). Therefore, no key but a survey is given, listing the taxa known from the various parts of the range. Supplemented by the figures in colour, it will serve as a practical guide.

### Survey of the distinguished taxa in *Opiptacris*

New Hebrides	<i>hilaris</i> Walker (after a single discoloured male, no precise locality)
Solomon Is.:	
Malaita I.	<i>ruficeps ruficeps</i> (C. Willemse) <i>ruficeps aberrans</i> subsp. nov.
Guadalcanal I.	<i>tennis</i> spec. nov. spec. nov.? (only ♀)
Florida Is.	<i>tulagii</i> Uvarov (only ♀, Tulagi I.)
New Georgia Is.	<i>novageorgica</i> spec. nov. (New Georgia I., Sasavele I., Kolombangara I., Gizo I., Rendova I.) <i>vellalavellae</i> spec. nov. (Vella Lavella)
Santa Isabel I.	<i>uniformis uniformis</i> C. Willemse (based on a single discoloured male, no precise locality) <i>uniformis georgica</i> C. Willemse (only ♀, San Jorge I.) <i>uniformis cephalica</i> subsp. nov. (Tatamba, Raja) <i>uniformis tricolor</i> subsp. nov. (Rasa, Nagolau) <i>uniformis bicolor</i> subsp. nov. (Tolana, Buala)
Wagina I.	<i>uniformis striata</i> subsp. nov.
Choiseul I.	<i>choiseulensis</i> spec. nov.
Bougainville I.	<i>unicolor</i> spec. nov. (Togerao) <i>bougainvillea bougainvillea</i> Ramme (Buka I., NE Bougainville I.) <i>bougainvillea femorata</i> subsp. nov. (C. and S. Bougainville I.) <i>bougainvillea fauroensis</i> subsp. nov. (only ♂, Fauro I.)
Bismarck Archipelago:	
New Britain	<i>castanea</i> Kevan (only ♀)
Manus I.	<i>alata</i> spec. nov. (only ♂)
New Guinea:	
Jobi I.	spec.? (juvenile ♀, probably <i>Cranae</i> spec.)

### *Opiptacris hilaris* Walker, 1870

(Pl. 1 Fig. 1)

*Opiptacris hilaris* Walker, 1870: 650; Kirby, 1910: 387; Uvarov, 1937: 17, 18; C. Willemse, 1956: 91, 92, 97; Dirsh, 1956: 277, Pl. 41 Fig. 23; Kevan, 1966: 410.

Material studied: ♂ holotype, labelled: New Hebrides 44 45, *Opipt. hilaris* W. Type, Type (BMNH). The specimen is strongly discoloured, lacks both antennae and the phallic complex, while both hind legs and the right fore leg have been repaired.

## Redescription.

♂ (Pl. 1 Fig. 1). Slender. Head moderately globose. Face wrinkled. Fastigium verticis triangular, greatest width and length equal, in profile slightly declivous, the apex narrowly parabolic. Eyes moderately prominent. Interocular distance about half the greatest width of the fastigium verticis. Pronotum slightly shorter and wider than head, sulci strong. Elytron reaching middle of metanotum, elongate-elliptical, partly hyaline, apex narrowly parabolic.

Upper lateral clypeal angle, apical part of mandible, crescents of hind knee and base of hind tibia, dark brown. The furculae are black. Pronotum, first and second episterna, fore and middle coxae and femora, lower lobes of hind knee and abdomen possess a shade of violaceous and are darker than the straw-yellow head, hind femur and all tibiae. The hind knee has a faintly indicated, yellow, dorsal antegenicular spot.

♀. Unknown.

Measurements (♂) : l. of body 24.0; l. of pronotum 4.1; l. of elytron 1.2; w. of elytron 0.7; l. of hind femur 12.5.

Distribution. New Hebrides (no precise locality).

Discussion. Dirsh (1956) gave a figure of the epiphallus. As to the colour pattern, there is some resemblance to *uniformis tricolor* from Santa Isabel I. As no further material of the genus is known from the New Hebrides, the record certainly needs confirmation. The species (unfortunately the type-species) is poorly defined owing to the condition of the material.

### *Opiptacris ruficeps* (C. Willemse, 1931)

The available material from Malaita I. is, morphologically, uniform. However, two quite different colour forms are present. One of these agrees fully with the holotype of *ruficeps*. The other, having never been recorded before, is named *ruficeps aberrans* ssp. n.

### *Opiptacris ruficeps ruficeps* (C. Willemse, 1931)

(Pl. 1 Fig. 2—3)

*Salomonacris ruficeps* C. Willemse, 1931: 345, Fig. 2; F. Willemse, 1966a: 41.

*Opiptacris ruficeps*: Uvarov, 1937: 18; C. Willemse, 1956: 91, 92; Kevan, 1966: 410.

*Salomonacris atriceps* C. Willemse, 1931: 347, Fig. 3; F. Willemse, 1966a: 41. Syn. nov.

*Opiptacris atriceps*: Uvarov, 1937: 18; C. Willemse, 1956: 92, 93.

*Cranae signata* C. Willemse, 1935: 167, Fig. 1; F. Willemse, 1966a: 38. Syn. nov.

*Opiptacris signata*: Uvarov, 1937: 17, 18; C. Willemse, 1956: 92, 94; Kevan, 1966: 410.

Material studied: ♂ holotype of *Salomonacris ruficeps*, labelled: Inneres N. Malaita Salomonen IV.29. E. Paravicini, *Salomonacris ruficeps* n. sp. ♂ Det. C. Willemse, Type (NMB). Left antenna and right fore leg lacking.

♀ holotype of *Salomonacris atriceps*, labelled: Inneres N. Malaita Salomonen IV.29. E. Paravicini, *Salomonacris atriceps* n. sp. ♀ Det. C. Willemse, Type (NMB). Right antenna and left hind leg lacking.

♀ holotype of *Cranae signata*, labelled: Solomon Islands Malaita Is. Su'u Pandanus 16.VIII.1934 H. T. Pagden, 115, *Cranae signata* nov. sp. Dr. C. Willemse det. 1935, Type (BMNH). Both antennae and left fore leg lacking.

Additional material: Solomon Is., Malaita I.: Auki-Tangtatau, 25—200 m, 23.IX.1957, J. L. Gressitt (1 ♂ 1 ♀); Tangtatau, 200 m, 23.IX.1957, B. Stone (2 ♂ 1 ♀); Tangtatau-Kwalo, 200—350 m, 24.IX.1957, J. L. Gressitt (1 ♀); Nana-Lava, 25 km NE Dala, 200 m, 16.VI.1964, J. Sedlacek (1 ♀); Dala, 50 m, 11.VI.1964, R. Straatman (1 ♂) & 9—14. & 22.VI.1964, J. M. Sedlacek (3 ♂ 3 ♀) (all BPBM); Nafinera, 27.IV.1955, E. S. Brown 3177 (1 ♂); Haffina, 27.V.1955, E. S. Brown 3177 (3 ♂ 1 ♀ 2 juv. ♀); Fulisago-Maelegwasu, 26.V.1955, E. S. Brown 3151 (1 ♂ 1 juv. ♂); Little Malaita, nr. Maramasike Passage, 27.XI.1965, low vegetation village garden, Roy. Soc. Exped. (1 ♀) (all BMNH).

### Redescription.

♂ (Pl. 2 Fig. 2). Slender. Head moderately globose, eyes slightly prominent. Fastigium verticis as wide as long or, usually, slightly wider than long; in profile not or slightly declivous. Interocular distance slightly more than half the greatest width of the fastigium verticis. Pronotum short, as long and wide as head, lateral lobes parallel, sulci very strong. Elytron extremely small, not or very slightly extending beyond hind margin of mesonotum, elongate, apex narrowly parabolic.

Coloration red and black. Antennae bluish black, apically brownish black. Head from scarlet red to orange red, but face and fastigium verticis yellow or orange yellow. Thorax, elytron and first abdominal tergite as the head; pronotal sulci sometimes bluish; pleurae partly and meso- and metasterna laterally, dark blue; ventral side of prosternal tubercle yellow or blue. Abdomen (except the first tergite) from dark blue to bluish black; cerci and central area of subgenital plate sometimes yellowish. Coxae red or partly red and dark blue. Legs dark blue or bluish black; fore and middle knees and base of fore and middle tibiae often partly red; hind knee with a yellow or red, small, dorsal, antegenicular spot and a yellowish, very narrow, postgenicular ring.

♀ (Pl. 1 Fig. 3). Colour black and orange red to brown red. Antennae as in male. Vertex, occiput and genae black, sometimes with a shade of red. Fastigium verticis, face and mouthparts ranging from yellow, via orange and brown red to almost black. Thorax, elytron and first abdominal tergite as in male, but brown red and darker. Abdomen and legs as in male, but abdomen, fore and middle legs have a shade of dark brown rather than of dark blue.

Measurements: l. of body ♂ 22.0—23.0, ♀ 30.0—31.0; l. of pronotum ♂ 4.2—4.3, ♀ 5.5—5.7; l. of elytron ♂ 0.6—0.7, ♀ 0.6—0.9; w. of elytron ♂ 0.4—0.6, ♀ 0.4—0.5; l. of hind femur ♂ 11.8—13.0, ♀ 14.9—15.5.

Distribution. Solomon Is.: Malaita I.

Discussion. The species is characterized morphologically by its slender appearance, and especially by its very small elytra and deep pronotal sulci.

Comparison of the types of *Salomonacris atriceps* and *Cranae signata* with the material on hand, reveals their identity with the not earlier recognized female of *ruficeps*. Sexual dichromatism is evident. Juvenile specimens are coloured as the adult ones, the juvenile body is slightly paler red.

The male from Fulisago-Maelegwasu, some specimens from Haffina and the female from Little Malaita, differ slightly in colour from the holotype. The first recorded male has the fore and middle legs red, while the abdomen and hind femora are blackish red. Two males from Haffina have the typical colour, while the third male is coloured as



the *Fulisago-Maelegwasu* specimen. The female from Haffina is very dark, head and pronotum are black, while only the anterior and posterior margins of the pronotum and the elytra are red. The female from Little Malaita is completely black except for partly scarlet red face and pronotum, yellowish elytra and a small, red, antegenicular spot of the hind knee. The morphology agrees with *ruficeps*, but I am not quite certain as to the correctness of its present allocation.

*Opiptacris ruficeps aberrans* subsp. nov.

(Pl. 1 Fig. 4—5)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is. Malaita Gisiuva, 26.I.1965 P. J. M. Greenslade 16300 (BMNH); paratypes: Solomon Is., Malaita I.: Tanava, 22.I.1965, P. Greenslade 16204 (2 ♂) & 16203 (1 ♀) (BMNH); Kwailasi, 25.V.1955, E. S. Brown 3128 (1 ♀) (BMNH); Fanabu, 3.IX.1954, E. S. Brown 916 (1 juv. ♀) (BMNH); Auki, 2—20 m, 2.X.1957, J. L. Gressitt (1 ♂) (BPBM); 6 km N. Auki, 60 m, 3.VII.1964, J. & M. Sedlacek (1 ♂) (BPBM).

Description.

♂ (Pl. 1 Fig. 4). Morphology as in the nominate subspecies.

Coloration black and yellow. Antennae and head as in nominate *ruficeps*, but rather more yellow or orange yellow than red. Thorax, abdomen and legs black with a shade of blue. Elytron yellow or orange yellow. Hind knee with ante- and postgenicular rings as in nominate *ruficeps*.

♀ (Pl. 1 Fig. 5). Completely black except for brown or yellow elytra, face mottled with dark brown, brownish eyes and sometimes an indistinct, yellow, antegenicular spot near the hind knee.

Measurements: l. of body ♂ 22.0—23.0, ♀ 30.0—32.0; l. of pronotum ♂ 4.2—4.4, ♀ 5.6—6.1; l. of elytron ♂ 0.6—0.7, ♀ 0.7—1.0; w. of elytron ♂ 0.3—0.5, ♀ 0.6—0.7; l. of hind femur ♂ 12.0—12.3, ♀ 14.1—14.9.

Distribution. Solomon Is.: Malaita I.

Discussion. Noticeable variation is unapparent. The distribution of this and the nominate subspecies cannot be indicated more precisely, because several localities could not be traced. Of special interest appears to be the region near Auki and Dala. Sexual dichromatism concerns the colour of the head. The juvenile female has the same colour as the adult one, but the "black" is dark blue instead.

*Opiptacris tenuis* spec. nov.

(Pl. 1 Fig. 6—7)

Material studied: ♂ holotype, labelled: Solomon Is. Guadalcanal I. Sutakiki R. 28.VI.1956 E. S. Brown B.M. 1957—201, 5351 (BMNH); ♀ allotype, labelled: Solomon Is. Guadalcanal I.: Gold Ridge 800 m VI-23-1956, J. L. Gressitt collector (BPBM); paratypes: Solomon Is., Guadalcanal I.: Gold Ridge, 500 m, 25.VI.1956, J. L. Gressitt (1 ♀) (BPBM); Gold Ridge, III.1955, E. S. Brown 2395 (1 ♀, 1 ♂ 1 juv. ♂ & ♀, latter three slightly discoloured) & 2465 (1 ♀) (all BMNH); Tenaru, 11.III.1955, E. S. Brown (1 ♂) (BMNH); Nalimbiu R., 20.I.1963, R. W. Paine 3492 (1 ♂)

(BMNH); Ngalimvatu, 8.VIII.1963, P. Greenslade 8455 (1 ♀) (BMNH); Honiara, 27.IV.1964, R. Straatman (1 slightly discoloured ♂) (BPBM).

### Description.

♂ (Pl. 1 Fig. 6). Rather slender. Head moderately globose, eyes slightly prominent. Interocular distance about half as wide as the greatest width of the fastigium verticis, which is nearly as wide as long. Pronotum as long and as wide as the head, slightly compressed laterally, sulci moderately deep. Elytron elongate, apex parabolic, reaching middle of metanotum, hyaline along lower margin.

Coloration orange and black. Antennae brown. Head orange. Pronotum black with a distinct shade of orange. Rest of thorax, elytra and abdomen orange, except lower part of pleurae and lateral part of meso- and metasterna, which are orange black, as is the pronotum; cerci, furculae and lateral margins of supra-anal plate bluish black. Coxae orange black. Fore and middle femora bluish black. Fore and middle tibiae and tarsi orange black. Hind femur bluish black, the lower inner marginal area and a small, dorsal, antegenicular spot orange. Hind tibia and tarsus bluish black, proximal third part of hind tibia beyond condylus more orange.

♀ (Pl. 1 Fig. 7). Coloration black and yellowish brown. Antennae dark brown. Fastigium verticis, face and lower part of the gena yellow or brown, rest of vertex, occiput and area behind eye black. First episternum and pronotum brownish black; anterior and posterior angles of lateral lobe yellowish or brown. Pleurae with the upper part yellowish brown, the lower part brownish black. Sterna dark brown. Meso- and metanota, elytra and proximal abdominal tergites from above yellowish brown; rest of abdomen darker brown, sometimes with a shade of blue. Coxae, fore and middle femora and tibiae brownish black, tarsi paler. Hind femur bluish black, lower inner marginal area and a small, dorsal, antegenicular spot brown. Hind tibia and tarsus bluish black, hind tibia with a narrow postgenicular yellow ring.

Measurements: l. of body ♂ 21.5—22.5, ♀ 30.5—31.0; l. of pronotum ♂ 4.0—4.1, ♀ 5.4—5.6; l. of elytron ♂ 1.2—1.5, ♀ 1.5—1.6; w. of elytron ♂ 0.7—0.8, ♀ 0.9—1.0; l. of hind femur ♂ 11.7—12.1, ♀ 14.2—15.8.

Distribution. Solomon Is.: Guadalcanal I.

Discussion. The species is characterized by its slender general appearance. Variation in colour of the material from different localities (if not discoloured) is not noticeable. Form and size of the elytra are much as in the species occurring on Tulagi, Santa Isabel, Wagina, Fauro, Bougainville and Buka Is. Sexual dichromatism is apparent.

### *Optiptacris* spec. nov.?

Material studied: Solomon Is., Guadalcanal, Lunga R., bridge, 3.IX.1960, C. W. O'Brien (2 ♀) (BPBM).

These two females are quite different from *tenuis*. The general appearance is more robust, the head more globose, the face less reclinate, the pronotum longer and the sulci deeper, while they differ mainly in colour by the presence of a wide, scarlet red band on each side over the pronotal dorsum. There is some resemblance with *tulagii*.

*Opiptacris tulagii* Uvarov, 1937  
(Pl. 1 Fig. 8)

*Opiptacris signata tulagii* Uvarov, 1937: 18; C. Willemse, 1956: 95.

Material studied: ♀ holotype, labelled: Solomon Is. Tulagi 26.I.1935 H. T. Pagden, Pandanus, 3562, *Opiptacris signata tulagii* sbsp. n. Type Det. B. Uvarov 1936, Type (BMNH).

Redescription.

♂. Unknown.

♀ (Pl. 1 Fig. 8). Body moderately robust. Head strongly globose, face slightly reclinate. Fastigium verticis short, the length being slightly less than the greatest width, and distinctly marked off from the rest of the vertex. Interocular distance more than half the greatest width of the fastigium verticis. Pronotum in the middle slightly laterally compressed, sulci moderately deep. Elytron elongate, apex parabolic and reaching middle of metanotum.

Coloration black and scarlet red. Antennae bluish black. Face red and yellow, vertex and genae scarlet red except a mid-dorsal triangular black spot on the occiput. Thorax black, except the yellow anterior and red posterior angles of the pronotal lateral lobe, and three red spots on each side of the pronotal dorsum. Elytra scarlet red. Abdomen and legs bluish black, the hind knee with a red antegenicular and a yellow, narrow, incomplete postgenicular ring.

Measurements (♀): l. of body 33.0; l. of pronotum 6.2; l. of elytron 1.5; w. of elytron 1.0; l. of hind femur 15.6.

Distribution. Solomon Is.: Florida Is.: Tulagi I.

Discussion. This taxon was originally described as a subspecies of *signata* (now synonymized with nominate *ruficeps*). As the morphology of the head and the elytra in *tulagii* disagrees with *signata*, I propose to give *tulagii* full specific status. The species is characterized by its globose head. The head, the fastigium verticis and the elytra are useful to distinguish *tulagii* from the nearly similarly coloured female of *choiseulensis*.

*Opiptacris novageorgica* spec. nov.

(Fig. 1—2, 10—13, Pl. 1 Fig. 9—10)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is.: New Georgia Group N. Georgia I., Munda 1—30 m, VII-20-1959, J. L. Gressitt collector (BPBM); paratypes: Solomon Is., New Georgia Group, New Georgia I.: Munda, 1—30 m, 6. (1 ♂) & 14—15. (1 juv. ♂) & 15. (1 ♂ 1 juv. ♂ 1 ♀ 1 juv. ♀) & 20. (1 ♂ 1 ♀) VII. 1959, J. L. Gressitt (BPBM); Munda, 2.IX.1964, M. McQuillan 12797 (1 ♂ 2 ♀) (BMNH); Barike R., 19.VIII.1963, M. McQuillan 7660 & 7658 (4 ♂ 1 ♀ 1 juv. ♀) (BMNH).

Description.

♂ (Pl. 1 Fig. 9). Body short and wide. Head rather globose, face moderately wrinkled. Eyes comparatively large and prominent. Interocular distance about half the greatest width of the fastigium verticis, which is about as long as wide and, in profile, de-

clivous. Pronotum as long and wide as the head or shorter, sulci moderately deep. Elytron strongly sclerotized, scale-like, wide, the width more than half the length, apex widely parabolic; upper and lower margins strongly curved, whole elytron roughly circular and reaching the middle or almost the hind margin of metanotum.

Coloration yellowish brown and sanguineous red. Antenna dark blue. Head, thorax, fore and middle coxae yellowish brown. Elytron yellow or orange yellow. Abdomen black with a shade of blue, hind margins of tergites brown. Fore and middle legs yellowish red. Hind femur sanguineous red, hind knee dark blue. Hind tibia bluish black from above, orange black from below. Hind tarsus bluish black.

♀ (Pl. 1 Fig. 10). Coloration bluish black. Face below eye, lower cheek and mouth-parts sometimes partly red. Elytron bright orange. Hind knee with an orange red, narrow, antegenicular ring.

Measurements: l. of body ♂ 22.0—23.5, ♀ 29.0—30.6; l. of pronotum ♂ 4.0—4.1, ♀ 5.3—5.7; l. of elytron ♂ 1.3—1.6, ♀ 1.4—2.0; w. of elytron ♂ 1.0—1.2, ♀ 1.2—1.4; l. of hind femur ♂ 11.3—11.8, ♀ 14.7—15.2.

Distribution. Solomon Is.: New Georgia Group; New Georgia I.

Discussion. The species is well-defined by the elytra. Sexual dichromatism is manifest. The colour of juvenile and adult specimens is almost alike, the former being only slightly paler.

Additional material: Solomon Is., New Georgia I.: 3 mls. W. of Lamberte-Munda, 3.IX.1965, Roy. Soc. Exped. (1 ♀); 2 mls. W. of Lamberte, 1.IX.1965, feeding on Pandanus, by coast road, Roy. Soc. Exped. (1 discoloured ♂); Wanawana, 16.VIII.1963, M. McQuillan 7678 (1 discoloured ♂) (all BMNH).

Solomon Is., New Georgia I.: Sasavele, 16.X.1954, E. S. Brown 1382 (1 ♂) (BMNH).

Solomon Is., Kolombangara I.: 1—12 m, 9.VII.1959, J. L. Gressitt (2 ♀) (BPBM); Kukundu, SW coast, 1—12 m, 10.VII.1959, J. L. Gressitt (2 ♂) (BPBM); Iriri, 5 & 100 & 100—250 m, 30.VI. & 1. & 2. & 3.VII. 1964, J. & M. Sedlacek (5 ♂) (BPBM); Pepele, 30 m, 31.I. & 7. & 10.II.1964, P. Shanahan (3 ♂ 1 ♀ 2 juv. ♀) (BPBM & BMNH); Sandfly Harbor, 5—200 m, 8.VII.1964, J. & M. Sedlacek (1 ♂) (BPBM); Gollifer's Camp, 100 m, 22.I.1964, P. Shanahan (1 ♀) (BPBM); Base Camp, 1 ml. inland from Kuzi, Kolombara R., 5.IX.1965, Roy. Soc. Exped. (1 ♂) (BMNH); Camp 1, 1 ml. inland from Kuzi, Kolombara River, 7. & 8.IX.1965, Roy. Soc. Exped. (1 ♂ 1 ♀) (BMNH); Mt. slope from 10 km, 300 m, 9.VII.1959, J. L. Gressitt (1 juv. ♂) (BPBM); Kuzi, IX.1965, Roy. Soc. Exped. (2 discoloured ♂ 1 ♀) (BMNH); 2600' Camp Gifa, 28.VIII.1965, Roy. Soc. Exped. (1 discoloured ♀) (BMNH); 1000' foliage, 3.IX.1965, Roy. Soc. Exped. (2 discoloured ♀) (BMNH); forest nr.? 1.1965, Roy. Soc. Exped. (1 discoloured ♀) (BMNH).

Solomon Is., Gizo I.: 90 m, 27.VI.1964, J. & M. Sedlacek (1 ♀) (BPBM); 50—120 m, 16—26.IV.1964, malaise trap, J. Sedlacek (1 ♀ 2 juv. ♀ & 1 ♂, latter three discoloured) (BPBM); 21.VIII.1963, M. McQuillan 7517 & 7518 (1 discoloured ♂ 1 juv. ♂ & ♀) (BMNH); 20.IX.1965, P. Greenslade 20664 (1 discoloured ♀) (BMNH).

Solomon Is., Rendova I.: 17.VIII.1963, M. McQuillan 7543 & 7545 (3 ♂ & 1 ♀, all discoloured) (BMNH); Egolo, 1—10 m, 16.VII.1959, J. L. Gressitt (1 ♀) (BPBM).

This additional material agrees morphologically more or less with the type-series of *novageorgica*, while the differences in colour range from slight to considerable. I cannot



decide whether the populations should be considered different taxa. The colour of the available populations, (provided that they are not discoloured) may be briefly summarized, being compared with typical *novageorgica*:

New Georgia I., Lamberte-Munda and Lamberte: ♀, differs by small red areas on each side of the pronotal dorsum;

New Georgia I., Sasavele I.: ♂, differs by red antennae, fore and middle legs, hind tibia and abdomen;

Kolombangara I.: ♂, differs by yellowish brown fore and middle legs and reddish abdomen; ♀, similar to typical one;

Gizo I.: differs by brownish black general colour and orange brown face, part of genae, pronotal margins, elytra and antegenicular ring of hind femur;

Rendova I.: ♀, differs by brownish black general colour, yellowish brown mottled head and pronotum, brown elytra and brown antegenicular spot on the hind knee; elytra less scale-like and less circular than in typical *novageorgica*.

### *Opiptacris vellalavellae* spec. nov.

(Pl. 1 Fig. 11—12)

Material studied: ♂ holotype, ♀ allotype, labelled: Solomon Is.: Vella Lavella I., Gingolo 60 m, 17.XI.1963, Gressitt B.M. 1971—197 (BMNH); paratypes: Solomon Is., Vella Lavella I.: Gingolo, 60 m, 17.XI.1963, Gressitt (1 ♂ 1 ♀) (BMNH); Ulo Crater, 10 m, XII. (1 juv. ♀) & 13. (1 ♀) & 16 (1 ♀) 500 (?800) m & 17. (1 ♂ 1 juv. ♀) XII.1963, P. Shanahan (BMNH & BPBM); Pussisoma, 20. (1 juv. ♀) & 21. (1 ♀) & 29. (1 ♂) XI.1963, P. Shanahan (BMNH); Head Water of Barakoma Creek, 29.XI. 1963, P. Shanahan (1 juv. ♂) (BMNH).

#### Description.

♂ (Pl. 1 Fig. 11). Moderately robust. Head rather globose, face very slightly wrinkled eyes slightly prominent. Fastigium verticis short and wide; in profile distinctly declivous. Interocular distance much wider than half the greatest width of the fastigium verticis. Pronotum about as long and as wide as the head, sulci moderately deep. Elytron much as in *novageorgica*, slightly more elongate, reaching middle of metanotum or just beyond this point.

Coloration yellowish brown and violaceous black. Head yellowish brown, mouthparts violaceous. Antennae as the head or slightly darker. Thorax violaceous black, with several yellow spots between the first and fourth sulci, both on pronotal lateral lobe as well as on either side of pronotal dorsum. Elytron yellow. Abdomen brown, proximal tergites violaceous from above. Fore and middle legs yellowish brown. Hind femur in proximal half violaceous black, in distal half yellowish brown. Hind knee and very base of hind tibia blackish brown. Hind tibia in proximal half olivaceous or yellowish green, in distal half violaceous. Hind tarsus as on proximal half of hind tibia.

♀ (Pl. 1 Fig. 12). Coloration yellowish brown and black. Antenna dark violaceous, paler apically. Head orange or brownish red. Thorax as in male; meso- and metanota sometimes not violaceous black but paler violaceous or brown, as the abdomen. Abdomen mottled with dark and pale brown with a shade of violaceous. Elytron and legs as in male, the violaceous colour of the hind leg usually being very dark.

Measurements: l. of body ♂ 22.1—23.0, ♀ 29.2—30.0; l. of pronotum ♂ 4.1—4.4, ♀ 5.3—5.5; l. of elytron ♂ 1.2—1.6, ♀ 1.4—1.9; w. of elytron ♂ 0.8—0.9, ♀ 0.9—1.0; l. of hind femur ♂ 11.8—12.2, ♀ 14.2—14.7.

Distribution. Solomon Is.: Vella Lavella I.

Discussion. The species is much alike *novageorgica*. It differs from the latter by the less wrinkled face, more slender general appearance and slightly elongate rather than circular elytra. Sexual dichromatism not conspicuous, restricted to the head only. The colour of juvenile specimens is nearly identical to that of the adult and quite unique within the genus.

### *Opiptacris uniformis* C. Willemse, 1956

This taxon was described after a single male from Santa Isabel I. The material from this area (including San Jorge I. and Wagina I.) is morphologically similar. It agrees with the holotype of *uniformis* and represents a taxonomic unit, preliminarily given specific rank. Among the material on hand, five quite differently coloured forms are recognized. Each of these forms occurs on a confined area and is classified as a subspecies. Unfortunately, the holotype of *uniformis* is much discoloured and also lacks a precise locality. This being so, it will be understood that it is impossible to be certain whether or not any of the now recognized colour forms is identical with the nominate one.

### *Opiptacris uniformis uniformis* C. Willemse, 1956

*Opiptacris uniformis* C. Willemse, 1956: 92, 96; F. Willemse, 1966a: 39; Kevan, 1966: 410 (?).

Material studied: ♂ holotype, labelled: Mus. Caes. Vind. Ins. Isabel (Salomo-Ins.) Albatros, *Opiptacris uniformis* n. sp. Det. C. Willemse, Type (NMW). The specimen besides being discoloured lacks both antennae, and the left middle and hind legs.

#### Redescription.

♂. Body robust. Head moderately globose, eyes slightly prominent. Interocular distance equal to about half the greatest width of the fastigium verticis, which is short, slightly wider than long, and, in profile, declivous. Pronotum about as long as head, sides slightly compressed in the middle, sulci deep. Elytron elongate, half as wide as long, apex narrowly parabolic, reaching beyond hind margin of mesonotum, but not beyond middle of metanotum.

As to the straw-yellow colour, the head is palest, the thorax darkest and the other parts intermediate.

♀. Unknown.

Measurements (♂): l. of body 24.7; l. of pronotum 4.0; l. of elytron 1.1; w. of elytron 0.6; l. of hind femur 12.9.

Distribution. Solomon Is.: Santa Isabel I.

Discussion. This taxon is poorly defined, see above. As for the record by Kevan, see below under *uniformis cephalica*.

***Opiptacris uniformis georgica* C. Willemse, 1956**  
(Pl. 2 Fig. 13)

*Opiptacris georgica* C. Willemse, 1956: 92, 96; F. Willemse, 1966a: 39.

Material studied: ♀ holo-, 2 ♀ paratypes, labelled: St. Georg Ins. Salomo. Ins. Albatros 15/2 1897, *Opiptacris georgica* sp. n. Det. C. Willemse, Type & Paratype (NMW). The holotype lacks both antennae and the left fore leg. All type-specimens are discoloured.

Additional material: Solomon Is., San Jorge, 23—27.IX.1965, scrub covered laterite hillside (coastal) and fringe of Casuarina forest, Roy. Soc. Exped. (1 ♀) (BMNH).

Redescription.

♂. Unknown.

♀ (Pl. 2 Fig. 13). Morphology as in nominate *uniformis*.

Colour black. Antennae dark brown. Head, first episternum and pronotum black; anterior angle of pronotal lateral lobe dark red. Pleurae, meso- and metasterna, meso- and metanota and abdomen bluish black. Elytron orange. Coxae, fore and middle femora bluish black. Fore and middle tibiae and tarsi orange brown. Hind leg bluish black, hind knee with a small, orange, antegenicular spot.

Measurements (♀): l. of body 30.8—31.9; l. of pronotum 5.9—6.0; l. of elytron 1.7—1.8; w. of elytron 0.9—1.0; l. of hind femur 15.5—16.0.

Distribution. Solomon Is.: San Jorge I.

Discussion. Because the morphology of *georgica* and *uniformis* is very similar, I propose the combination *uniformis georgica*.

The type specimens are discoloured, straw-yellow, except the blackish head and pronotum. The description given above is made after the well-preserved female collected in 1965. This agrees with the type specimens, morphologically as well as in the colour pattern. As to the latter, compare the remarks given above under the description of the genus.

***Opiptacris uniformis cephalica* subsp. nov.**

(Fig. 3—9, Pl. 2 Fig. 14—15)

*Opiptacris uniformis*: Kevan, 1966: 410. (?)

*Opiptacris* sp. aff. *bilaris*: Kevan, 1966: 410. (?)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is. Isabel Tatamba 25.4. 1963 M. McQuillan 5552 (BMNH); paratypes: Solomon Is., Santa Isabel I.: Tatamba [partim Tataba, misspelled?], 24.II. (3786 & 3787) & 25.IV. (5552 & 5553 & 5554 & 5556) & 24.V. (5568) & 25.V. (5567) & 27.V. (5605) & 22.VII. (7112) & 27.VIII. (7708) 1963 & 7.II. (10582) & 20.II. (10099 & 10100) 1964, M. McQuillan (15 ♂ 8 juv. ♂ 15 ♀ 9 juv. ♀) (BMNH); Tatamba, 2.X. forest and vegetation behind rest-house (1 ♂ 1 juv. ♀) 30.IX. low vegetation village garden (2 ♀) & 6.X. (1 discoloured ♀) & 29.IX. wooded hillside behind resthouse (2 ♂ 1 juv. ♂ 1 ♀ 1 juv. ♀, all discoloured) 1965, Roy. Soc. Exped. (BMNH); SE Tatamba, 0—50 m, 30.VIII.1964, sweeping, R. Straatman (1 juv. ♀) (BPBM); 2 mls. E. of Raja, Raja R., low vegetation village garden, 3.X.1965, Roy. Soc. Exped. (1 ♀) (BMNH).

## Description.

♂ (Pl. 2 Fig. 14). Morphology as in nominate *uniformis*.

Colour black and yellow, orange or scarlet red. Antennae bluish black. Head, elytron, fore and middle tibiae and tarsi and a small, antegenicula spot on the hind femur yellow, orange red or scarlet red. Thorax, abdomen and remainder of legs bluish black; ventral side of hind tibiae with a shade of yellow.

♀ (Pl. 2 Fig. 15). Similar to male. Occiput sometimes with one or more narrow blackish lines.

Measurements: l. of body ♂ 22.8—24.0, ♀ 29.5—31.1; l. of pronotum ♂ 4.0—4.2, ♀ 5.4—5.6; l. of elytron ♂ 1.2—1.3, ♀ 1.4—1.9; w. of elytron ♂ 0.7—0.8, ♀ 0.7—0.8; l. of hind femur ♂ 11.8—13.1, ♀ 14.3—15.2.

Distribution. Solomon Is.: Santa Isabel I.

Discussion. Sexual dichromatism is not apparent. Juvenile specimens resemble the adult insect in colour, except for the bluish black, which is paler in the juvenile. Males of *uniformis cephalica*, *choiseulensis* and *ruficeps aberrans* are similarly coloured but otherwise not identical. In *choiseulensis*, the larger elytra and the different fastigium verticis, and in *ruficeps aberrans*, the much shorter elytra and the stronger pronotal sulci, are features distinguishing these from *uniformis cephalica*.

A male and female, both labelled "Fulakora Solomon Isl. W. M. Mann", have been referred by Kevan (1966) to *O. uniformis* and *O. sp. aff. hilaris*, respectively. Both specimens are before me. They are strongly discoloured. The morphology agrees with that of *uniformis*. Although both specimens agree with discoloured specimens from Tatamba and their localities are near, identification remains uncertain.

*Opiptacris uniformis tricolor* subsp. nov.

(Pl. 2 Fig. 16—17)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is. Isabel Rasa 30.4.1963 M. McQuillan 5551 (BMNH); paratypes: Solomon Is., Santa Isabel I.: Rasa, 21.II. (3767) & 20.III. (3868 & 3869) & 30.IV. (5540 & 5551) & 23.VII. (7024 & 7084 & 7085 & 7081 & 7088) 1963 & 9.III.1964 (10694 & 10692), M. McQuillan (7 ♂ 1 juv. ♂ 18 ♀ 6 juv. ♀); Nagolau, 28.V.1963, M. McQuillan 5624 (1 juv. ♀) (all BMNH).

## Description.

♂ (Pl. 2 Fig. 16). Morphology as in nominate *uniformis*.

Coloration orange, sanguineous red, and black. Antenna dark brown, often orange proximally. Head orange. First and second episterna and pronotum bluish black; the very anterior angle of the pronotal lateral lobe orange or red. Meso- and metathorax, elytron and abdomen orange or orange red; anterior and lateral margins of mesosternum bluish black; distal sternites, distal tergites laterally, and tip of abdomen, except the cercus, partly blue. Fore and middle coxae and femora bluish black. Fore and middle tibiae and tarsi orange. Hind coxa orange. Hind femur sanguineous red, with a yellowish antegenicula dot above. Hind knee bluish black. Hind tibia orange, the base, apex, and ventral side distally blackish. Hind tarsus orange.

♀ (Pl. 2 Fig. 17). Colour yellowish brown and black and sometimes sanguineous



red. Head completely yellowish brown or, usually, with occiput and area behind eye brownish black, with or without a yellowish brown stripe, on each side, over the occiput. Thorax bluish black; anterior and sometimes also posterior angles of pronotal lateral lobe, upper part of pleurae, and meso- and metanota, yellowish or orange brown. Elytron yellow or orange brown. Abdomen bluish black; proximal tergites yellowish or orange brown. Fore and middle legs and hind coxae as in male. Hind femur ranging from reddish black to completely sanguineous red in other specimens; antegenicular spot yellow. Hind knee, tibia and tarsus as in male, hind tibia usually more bluish black.

Measurements: l. of body ♂ 22.0—24.2, ♀ 30.2—33.0; l. of pronotum ♂ 4.2—4.4, ♀ 5.8—6.0; l. of elytron ♂ 1.2—1.3, ♀ 1.4—1.7; w. of elytron ♂ 0.6—0.7, ♀ 0.8—0.9; l. of hind femur ♂ 11.9—12.5, ♀ 15.2—16.1.

Distribution. Solomon Is.: Santa Isabel I.

Discussion. Sexual dichromatism moderately developed. Colour of juvenile specimens similar to, or paler than, that of adult specimens. Hind femur of juvenile female always red.

### *Opiptacris uniformis* bicolor subsp. nov.

(Pl. 2 Fig. 18—19)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is. Isabel Tolana 4.II.1964 M. McQuillan 10556 (BMNH); paratypes: Solomon Is., Santa Isabel I.: Tolana, 4. & 5. & 6.II.1964, M. McQuillan (10553 & 10554 & 10555 & 10556 & 10558 & 10559 & 10560 & 10589 & 10783) (5 ♂ 3 ♀ 1 juv. ♀); Buala, 25.II.1963, M. McQuillan 3795 (1 ♂ 1 ♀) (all BMNH).

#### Description.

♂ (Pl. 2 Fig. 18). Morphology as in nominate *uniformis*.

Coloration yellow or orange yellow and black. Antennae dark brown. Head yellow, orange yellow or orange red. First episternum and pronotum bluish black; pronotal dorsum on each side with an incomplete, faint, yellow or orange stripe running from anterior margin to fourth sulcus; anterior and sometimes also posterior angles of pronotal lateral lobe yellow or orange red. Meso- and metasterna laterally bluish black, medially yellowish. Upper part of pleurae yellow or orange red, lower part bluish black. Meso- and metanota and elytron yellow or orange red. Abdomen yellowish, the tip, sternites and tergites laterally, partly bluish black. Coxae, femora and hind tibia bluish black. Fore and middle tibiae yellow or orange red. Tarsi brown or bluish brown. Hind knee bluish black, ante- and postgenicular rings orange or orange red.

♀ (Pl. 2 Fig. 19). Colour as in male, except black band on head, usually, on each side, behind the eye and a median one over the occiput. Yellow stripes over the pronotum wider and more distinct than in male.

Measurements: l. of body ♂ 23.1—24.9, ♀ 32.5—34.1; l. of pronotum ♂ 4.4—4.6, ♀ 5.7—6.3; l. of elytron ♂ 1.2—1.3, ♀ 1.5—1.8; w. of elytron ♂ 0.7—0.8, ♀ 0.9—1.0; l. of hind femur ♂ 12.0—12.2, ♀ 14.5—15.8.

Distribution. Solomon Is.: Santa Isabel I.

Discussion. Sexual dichromatism is unapparent.

*Opiptacris uniformis striata* subsp. nov.

(Pl. 2 Fig. 20—21)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is. Choiseul Wagina 26.8. 1964 M. McQuillan 12831 (BMNH); paratypes: similar label (12830 & 12831) (4 ♂ 1 juv. ♂ 2 ♀ 4 juv. ♀) (BMNH).

## Description.

♂ (Pl. 2 Fig. 20). Morphology as in nominate *uniformis*.

Coloration orange red and black. Antennae brownish black. Head orange red, but posterior part of vertex, occiput and area behind eye black. Thorax orange red. Abdomen orange yellow, tip and distal tergites laterally with a shade of blue. Elytron and coxae orange yellow. Fore and middle femora and tibiae blue or bluish black, the tarsi dark brown. Hind femur yellowish with the carinae, carinulae and fish-bone pattern of inner and outer sides blue or bluish black. Hind knee bluish black, ante- and postgenicular rings yellow. Hind tibia bluish black, hind tarsus paler.

♀ (Pl. 2 Fig. 21). Colour black. Antennae as in male. Head brownish black with the face and lower part of gena yellow and mottled with black. Thorax brownish black; lower margin of pronotal lateral lobe narrowly bordered with yellow; meso- and meta-nota brown. Elytron yellowish brown. Abdomen brownish black, hind margin of tergites paler brown. Legs as in male, outer and upper sides of hind femur usually darker yellow ranging to dark bluish.

Measurements: l. of body ♂ 21.1—22.7, ♀ 29.2—31.1; l. of pronotum ♂ 4.2—4.3, ♀ 5.5—5.7; l. of elytron ♂ 1.0—1.3, ♀ 1.5—1.7; w. of elytron ♂ 0.5—0.6, ♀ 0.8—0.9; l. of hind femur ♂ 11.9—12.7, ♀ 15.1—15.8.

Distribution. Solomon Is.: Wagina I (= Vaghena I.).

Discussion. The striated pattern of the hind femur is quite characteristic. Juvenile specimens are slightly paler than adult ones. Sexual dichromatism is distinct.

*Opiptacris choiseulensis* spec. nov.

(Pl. 2 Fig. 22—23)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is., Choiseul I., Kitipi R. 80 m 17.III.1964, P. Shanahan collector Bishop (BPBM); paratypes: similar label (5 ♂ 1 juv. ♂ 4 ♀) (BPBM); Solomon Is., Choiseul I.: Kolombangara R., 60 m, 20.III.1964, P.S. (4 ♂ 3 ♀) (BPBM); Malangano, 25.VIII.1963, M. McQuillan 7326 (2 ♂) (BMNH).

## Description.

♂ (Pl. 2 Fig. 22). Moderately robust. Head globose. Interocular distance narrow, half as long as the greatest width of the fastigium verticis. Fastigium verticis narrowly triangular, slightly longer than wide, and, in profile, not or very slightly declivous. Pronotum about equal in length and width to the head, sulci moderately deep. Elytron comparatively long, reaching almost as far as hind margin of metanotum or slightly shorter, about half as wide as long, elliptical, with apex parabolic.

Colour black and red. Antennae brown. Head scarlet, orange red or yellowish red.

Thorax, abdomen and legs bluish black. Elytron from orange red to yellow. Hind femur sometimes with a narrow, dorsal, yellow or red, antegenicular spot.

♀ (Pl. 2 Fig. 23). Colour similar to male, except the pronotum, which is black, but for the anterior and posterior angles of the lateral lobe and (on each side of the dorsum) an incomplete band, which are scarlet red or sometimes yellow.

Measurements: l. of body ♂ 23.5—24.9, ♀ 31.8—33.2; l. of pronotum ♂ 4.2—4.5, ♀ 5.9—6.0; l. of elytron ♂ 1.5—1.7, ♀ 2.0—2.5; w. of elytron ♂ 0.9—1.0, ♀ 1.1—1.2; l. of hind femur ♂ 13.0—13.8, ♀ 16.2—16.8.

Distribution. Solomon Is.: Choiseul I.

Discussion. The fastigium verticis and the form and length of the elytra are characteristic. Sexual dichromatism is moderately developed. The juvenile male from Kitipi R., is coloured similarly to the adult.

This species differs from *tulagii* (only ♀ known) by more globose head, shorter and more declivous fastigium verticis and shorter elytra in the latter. Distinction between *choiseulensis* and *ruficeps aberrans* is apparent. Both sexes differ by the shorter elytra, deeper pronotal sulci and shorter fastigium verticis, the female of the latter also by the black head. Distinction between *choiseulensis* and *uniformis bicolor* is indicated in both sexes by the shorter and more declivous fastigium verticis, the deeper pronotal sulci, the slight lateral compression of the pronotum and shorter elytra, the female of the latter moreover by the less completely black coloured abdomen.

### *Opiptacris unicolor* spec. nov.

(Pl. 2 Fig. 24, Pl. 3 Fig. 25)

Material studied: ♂ holo-, ♀ allotype, labelled: Bougainville Togerao 600 m 15—21.4.1968, R. Straatman collector (BPBM); paratypes: similar label (1 juv. ♂ 3 ♀ 1 juv. ♀) (BPBM).

#### Description.

♂ (Pl. 2 Fig. 24). Body robust. Head moderately globose, eyes rather prominent. Fastigium verticis about as long as wide, apex wide and truncate, declivous in profile. Interocular distance about half as wide as the greatest width of the fastigium verticis. Pronotum longer than head, sulci deep. Elytron reaching middle of metanotum, elongate, margins subparallel, apex parabolic, slightly sclerotized.

Coloration scarlet red. Antennae dark blue. Head, thorax, elytra, abdomen and legs, scarlet red except the partly black mouthparts, bluish black apex of the knee-lobes of the fore and middle femora, and bluish black hind knee, base and apex of the hind tibia.

♀ (Pl. 3 Fig. 25). Completely black, except the dark brown elytra. Abdomen and legs with a shade of blue.

Measurements: l. of body ♂ 24.8, ♀ 31.2—33.3; l. of pronotum ♂ 5.0, ♀ 5.8—6.6; l. of elytron ♂ 1.4, ♀ 1.8—2.0; w. of elytron ♂ 0.8, ♀ 0.8—1.0; l. of hind femur ♂ 13.5, ♀ 16.0—16.5.

Distribution. Solomon Is.: Bougainville I.

Discussion. Characteristic are the robust body and the long pronotum with deep sulci. Sexual dichromatism is conspicuous. The juvenile male and female are both uniformly red, agreeing completely with the adult male, but they are strikingly different from the completely black adult female.

On Bougainville I. occurs also *bougainvillea*. Apart from the different colour, recognition of *unicolor* is possible by its more robust general appearance, slightly more globose head, more declivous fastigium verticis and deeper pronotal sulci.

### *Opiptacris bougainvillea* Ramme, 1941

This species was described after a single male from Bougainville I. Apart from *unicolor*, described above, at least three different colour forms are recognized among the present material from this area, including Buka I. in the north and Fauro I. in the south. Morphologically, the forms agree with each other. Apparently they represent one taxonomic unit which is given specific rank. Each colour form occurs on a confined part of the range and is considered a subspecies. The form which occurs on Buka I. and the northern part of Bougainville I., agrees with the holotype of *O. bougainvillea* (male sex) and with that of *O. salomona* (female sex). The form occurring in the central and southern parts of Bougainville I. is described below as *bougainvillea femorata*, the one on Fauro I. as *bougainvillea fauroensis*.

### *Opiptacris bougainvillea bougainvillea* Ramme, 1941

(Pl. 3 Fig. 26—27)

*Opiptacris bougainvillea* Ramme, 1941: 93; C. Willemse, 1956: 91, 92; Kevan, 1966: 409, 410 (partim).

*Opiptacris salomona* Ramme, 1941: 93; C. Willemse, 1956: 92, 93; Kevan, 1966: 409. Syn. nov.

Material studied: ♂ holotype of *O. bougainvillea*, labelled: Bougainville Dr. L. Cohn, Typus (ZMHU). Right antenna and right hind leg lacking.

♀ paratype of *O. salomona*, labelled: Südsee-Exp-Wolf 1909 Buka D. Salom. I.29.8. 09 40, Paratypus (ZMHU).

Additional material: Solomon Is., Buka I.: II.1964, R. Paine 10686 (1 ♀) & 10683 (1 ♂) (BMNH) (both slightly discoloured); Agric. Sta., 6—10.XII.1959, T. C. Maa (1 ♂) (BPBM); Gagan, 40 m, 15.VI.1956, J. L. Gressitt (1 ♂) (BPBM); Bougainville I.: NE, Mutahi, 700 m, 18 km SE. Tinputz, 1—7. & 15—21.III.1968, R. Straatman (5 ♂ 1 juv. ♂ 1 ♀) (BPBM).

### Redescription.

♂ (Pl. 3 Fig. 26). Body slender. Head slightly globose, eyes slightly prominent. Fastigium verticis narrow, longer than wide, apex narrowly truncate, subhorizontal in profile and not or very slightly declivous. Interocular distance slightly longer than half the greatest width of the fastigium verticis. Pronotum slightly longer than head, sulci moderately deep. Elytron small, reaching middle of metanotum, as long as or longer than wide, apex parabolic, the elytron usually partly hyaline.

Coloration scarlet red and black. Antennae bluish black. Head black with fastigium verticis, face and lower anterior part of gena scarlet red, orange red or orange yellow. Thorax, coxae and abdomen scarlet red; tip of abdomen bluish black. Elytron coloured as thorax, partly hyaline. Fore and middle legs and hind femur black with a shade of red; lower inner marginal area as well as antegenicular ring of hind femur red. Hind knee, tibia and tarsus bluish black.



♀ (Pl. 3 Fig. 27). Colour black and red. Head and legs as in male. Thorax and abdomen black, but lower margin of pronotal lateral lobe, a wide band on each side of pronotal dorsum, and sclerotized part of elytron, red.

Measurements: l. of body ♂ 23.0—24.2 ♀ 29.8—31.0; l. of pronotum ♂ 4.2—4.6, ♀ 5.8—6.0; l. of elytron ♂ 0.6—1.1, ♀ 1.5—1.8; w. of elytron ♂ 0.6—0.7, ♀ 0.8—1.0; l. of hind femur ♂ 12.1—13.0, ♀ 15.1—16.4.

Distribution. Solomon Is.: Buka I. and Bougainville I.

Discussion. The slender appearance, comparatively long pronotum and moderately impressed sulci are characteristic features. "Elytren völlig fehlend", as recorded in the original description of *bougainvillea*, is incorrect. They are 0.6 mm long and wide, reaching middle of metanotum, and are almost completely transparent in the holotype. Conspicuous is the sexual dichromatism, by which Ramme was induced to describe male and female as distinct taxa. The synonymy of *O. bougainvillea* and *O. salomona* is apparent on the basis of the present material. The juvenile male is coloured as the adult one. The male from Gagan has the fore and middle legs red. As the black pigmentation of these parts in the other material has a distinct shade of red, this variation appears not to be important. The male from the Agriculture Station has been referred to this species by Kevan (1966).

### *Opiptacris bougainvillea femorata* subsp. nov.

(Pl. 3 Fig. 28—29)

*Opiptacris bougainvillea*: Kevan, 1966: 409 (partim).

Material studied: ♂ holo-, ♀ allotype, labelled: Bougainville (S) Kokure 690 m, June 12 1956, E. J. Ford Jr. collector (BPBM); paratypes: similar label, 9. & 12.VI.1956 (1 ♂ 1 juv. ♂ 1 ♀ 1 juv. ♀); Mumurai, 400 m, 7.VI.1956, J. L. Gressitt (3 ♂); Boku, 50 m, 4. & 5.VI.1956, E. J. Ford Jr. (1 ♂ 1 juv. 1 ♀) (all BPBM).

#### Description.

♂ (Pl. 3 Fig. 28). Differing from nominate *bougainvillea* by the characteristic leg colour. Fore and middle pair scarlet red. Hind femur scarlet, but outer and upper sides of proximal half violaceous black. Hind knee and base of hind tibia dark blue. Hind tibia scarlet, spines dark blue. Hind tarsus bluish.

♀ (Pl. 3 Fig. 29). Resembling the nominate subspecies in colour, but head almost completely black, bands of pronotum wider and orange, and antegenicular ring of hind femur broader, slightly longer than the hind knee.

Measurements: l. of body ♂ 22.1—23.1, ♀ 30.9—31.2; l. of pronotum ♂ 4.0—4.6, ♀ 5.9—6.0; l. of elytron ♂ 0.7—1.2, ♀ 1.4—1.8; w. of elytron ♂ 0.4—0.8, ♀ 0.8—0.9; l. of hind femur ♂ 12.1—12.4, ♀ 15.5—16.0.

Distribution. Solomon Is.: Bougainville I.

Discussion. Sexual dichromatism is distinct. Colour of juvenile male similar to that of the adult, but that of juvenile and adult females, strikingly different. Head, thorax and abdomen of juvenile female red, compare a similar case in *unicolor*. A male from Kokure has been recorded previously (Kevan).

*Opiptacris bougainvillea fauroensis* subspec. nov.

(Pl. 3 Fig. 30)

Material studied: ♂ holotype, labelled: Solomon Is. Fauro I. NE 12.IV.1964, P. Shanahan collector (BPBM). The specimen lacks both antennae and right legs.

## Description.

♂ (Pl. 3 Fig. 30). Unlike nominate *bougainvillea* by differently coloured head, pronotum and legs. Head, fore and middle legs orange red. Pronotum reddish black with anterior and posterior angles of lateral lobe orange red. Hind femur with extreme base and distal part orange red, the proximal two-thirds black with a shade of red, lower inner marginal area entirely red. Hind knee, tibia and tarsus as in nominate *bougainvillea*.

♀. Unknown.

Measurements (♂) : l. of body 24.0; l. of pronotum 4.5; l. of elytron 1.3; w. of elytron 0.8; l. of hind femur 13.1.

Distribution. Solomon Is.: Fauro I.

Discussion. The red head and black pronotum are characteristic. Fore and middle legs as in *bougainvillea femorata*, hind leg intermediate between those of nominate *bougainvillea* and *bougainvillea femorata*. The abdomen is similar in all three subspecies.

*Opiptacris castanea* Kevan, 1966

(Pl. 3 Fig. 31)

*Opiptacris castanea* Kevan, 1966: 408, Pl. 3 f.a,b.

Material studied: ♀ holotype, labelled: New Britain Gisiluve, Nakanai Mts. 1050 m July 25 1956, E. J. Ford Jr. collector, *Opiptacris castanea* n. sp. det. D. K. McE. Kevan 1965 Type (BPBM). The specimen now lacks both antennae and the left hind leg (present in the original description).

## Redescription.

♂. Unknown.

♀ (Pl. 3 Fig. 31). The original description is extensive. Salient features are: the wide and globose head; wide interocular distance, which is as broad as the greatest width of the fastigium verticis; short and wide fastigium verticis, distinctly marked off from the rest of the vertex; the pronotum, which is slightly laterally compressed in the middle, with weak pronotal sulci; and especially the wide, apically truncated and comparatively large elytra.

Colour dark chestnut brown. Details are given in the original description.

Measurements (♀): l. of body 37.5; l. of pronotum 6.7; l. of elytron 3.2; w. of elytron 2.3; l. of hind femur 16.8.

Distribution. Bismarck Archipelago: New Britain.

Discussion. The species is well-defined, morphologically as well as in respect of colour.

*Opiptacris alata* spec. nov.

(Pl. 3 Fig. 32)

Material studied: ♂ holotype, labelled: Bismarck Arch.: Manus I.: Lorengau 1—85 m, VI.28—1959, J. L. Gressitt collector, Pandan (BPBM).

## Description.

♂ (Pl. 3 Fig. 32). Body slender. Head moderately globose, face strongly wrinkled, eyes slightly prominent. Interocular distance slightly less than greatest width of fastigium verticis, which is as long as wide and, in profile, slightly declivous. Pronotum about as long and as wide as the head, slightly laterally compressed in the middle, sulci deep. Elytron comparatively very large and wide, reaching just beyond the hind margin of the metanotum, apex truncate, surface smooth and shiny.

Colour black, red and yellow. Antennae bluish black basally, dark brown distally, pale brown apically. Scape of antenna and fastigium verticis yellow. Head scarlet red, mouthparts black and yellow. First and second episterna, pronotum, meso- and metasterna, bluish black. Meso- and metanota, second epimerum, third episternum and epimerum, yellowish brown. Elytron shining bluish black. First abdominal tergite yellowish brown, rest of abdomen bluish black. Fore and middle legs bluish black. Hind femur and coxa lemon yellow. Hind knee, tibia and tarsus bluish black.

♀. Unknown.

Measurements (♂): l. of body 23.3; l. of pronotum 4.5; l. of elytron 2.2; w. of elytron 1.8; l. of hind femur 12.3.

Distribution. Bismarck Archipelago: Manus I.

Discussion. Like *castanea*, the species is well-defined.

*Opiptacris* spec.?

*Opiptacris uniformis*: Kevan, 1966: 410 (partim).

Material studied: 1 juvenile ♀, labelled: Poue Jobi Isl., D. New Guinea, T. Barbour coll. (ANSP). The specimen is strongly discoloured and shrivelled.

The specimen has been referred to *uniformis* (?) by Kevan (1966). A study of this specimen reveals a closer relationship to *Cranae* than to *Opiptacris*. Especially the pronotum does not agree with the latter genus. Whether or not *Opiptacris* occurs within the area of New Guinea is still an open question.

*Bumacris* C. Willemse, 1931

Previously, diagnostic emphasis was placed mainly on conspicuously different coloration. In the present study, however, the species are morphologically defined. The following characters are used: general appearance, the more or less pitted integument, head proportions, form and gibbosity of the pronotum, venation of the tegmina, phallic complex of the male, and the ovipositor and hind margin of the subgenital plate of the female. The internal female genitalia appear rather uniform within the genus.

The previously known species of the genus form a natural group. Among the ma-

terial at present available, two new species were found, one from Rendova I. and a second from San Cristoval I. While the Rendova species is much alike previously described members of the genus, the one from San Cristoval I. is conspicuously different. However, the genitalia of the latter agree with those of *Bumacris*. On the basis of this, the San Cristoval species may be allocated to *Bumacris*, but the other morphological characters justify the erection of a distinct subgenus.

#### Key to the subgenera of *Bumacris*

1. Tegmina with the venation well developed; elytron with anal fold, longitudinal veins not greatly thickened, archedictyon in basal half. Antennae longer than combined length of head and pronotum. Integument from slightly to moderately pitted . . .  
 . . . . . *Bumacris* s.str. C. Willemse
- Tegmina with sparse venation; elytron without anal fold, the veins greatly thickened, archedictyon throughout. Antennae shorter, as long as the combined length of head and pronotum. Integument smooth except for slightly pitted pronotal metazona . .  
 . . . . . *Cristovalacris* subgen. nov.

#### *Bumacris* (*Bumacris*) C. Willemse, 1931

*Bumacris* C. Willemse, 1931: 348—350; 1935: 165—166; Uvarov, 1937: 16—17; C. Willemse, 1956: 10, 176—177; F. Willemse, 1966a: 37.

Type species: *Bumacris flavomaculata* C. Willemse, 1931.

#### Redescription.

♂ ♀. Size medium, robust. Integument finely to moderately pitted. Antennae filiform, longer than head and pronotum together, reaching just beyond base of hind femur, segments up to four or five times as long as wide. Fastigium verticis marked off from the rest of the vertex, transverse, in dorsal view scarcely impressed with anterior margin slightly curved, in profile sloping and merging in the frontal ridge; lateral carinae between the eyes poorly developed. Interocular distance about half as wide as the greatest width of the fastigium verticis. Eyes oblong, more or less prominent. Occiput more or less convex. Face more or less reclinate. Frontal ridge straight, sometimes slightly projecting between the antennal base, more or less deeply sulcated throughout, keels parallel and obtuse. Lateral facial keels present. Mouthparts and cheeks normally to strongly developed.

Pronotum subcylindrical. Prozona ranging from not to distinctly gibbose, both dorsally and laterally. Metazona more flattened dorsally, lateral 'shoulders' poorly developed. Dorsum of pronotum straight or saddle-shaped in profile, or with the prozona more or less gibbose. Lateral pronotal lobe about as long as high, or longer. As seen from above, the prozona parallel and the metazona slightly divergent, or pro- and metazona both divergent. Median carina poorly developed, no lateral carinae. Sulci more or less strong. First (submarginal) sulcus present on lateral lobe, second sulcus on dorsum, third and fourth sulci both on dorsum and lateral lobes, the latter three sulci cutting the median line. Metazona about two-fifths of the pronotal length. Anterior margin broadly rounded, posterior margin more or less angularly rounded in the middle. Lower margin



weakly sigmoid, anterior angle broadly rounded, posterior angle about rectangular and slightly or not produced posteriorly.

Prosternal tubercle straight, conical, apex obtusely pointed. Mesosternal lobes slightly wider than long, interspace about half as wide as a lobe and slightly broadening posteriorly. Metasternal lobes with a narrow interspace.

Tegmina reaching the hind knee, or shorter. Elytron with the anterior margin minutely serrate and with a more or less developed precostal lobe, archdictyon moderately developed in the basal third, slightly pilose along the anal fold.

Tympanum large, open. Distal abdominal sternites with brush-like groups of hairs. Hind femur reaching well beyond tip of abdomen, upper keel terminating into a short spine, Brunner's organ present. Both lower hind knee-lobes spined. Hind tibia slightly expanded apically, the margins acute and pilose, external apical spine present. Hind tarsus slightly shorter than half of the hind tibial length, third segment about as long as the first and second combined.

♂. Hind margin of last abdominal tergite shallowly excised medially. Supra-anal plate triangular, widened basally and with a moderate median impression, apex obtuse. Cerci conical, slender, straight, apex scarcely incurved and obtusely pointed, reaching just beyond tip of supra-anal plate. Subgenital plate subconical, apex obtuse, sometimes slightly produced.

Epiphallus bridge-shaped, divided, no ancorae, anterior process bubble-like, lophi large and hook-like, incurved. Ectophallic membrane on each side with a ventro-lateral sclerite. Cingulum with U-like zygoma and apodemes. Cingular rami joining each other dorso-posteriorly, forming a triangular process, situated above apex of phallus and covering tip of cingular valves. Arch of cingulum with a bar-like, dorso-posterior process of the rami. Basal penis valve with a gonopore process and connected with the apical penis valve by a narrow, but complete flexure. Cingular and apical penis valves strongly upcurved, narrow and elongate. Apex of cingular valve recurved and rounded. Tip of apical penis valve truncate or, in most species, rounded, in the latter case with or without a spoon-like emargination.

♀. Supra-anal plate tongue-like. Cerci short, conical, slightly outcurved. Subgenital plate elongate, hind margin more or less produced posteriorly, near middle with more or less developed teeth; the very middle of the hind margin is usually truncate and distinctly marked off from the egg-guide, but in some specimens of nominate *pagdeni* pointed and continuous with the egg-guide. Dorsal side of subgenital plate with a pair of round columellae. Ovipositor valves slender, elongate, straight or nearly so. Dorsal side of upper valve truncately or more gradually narrowing to scarcely curved apex. Dorso-lateral keel of upper valve entire from apex to base, or lacking in the proximal part. Lower keels of lower valve, upper keels of upper valve, and lower margin of lateral basi-valvular sclerite, spinulose or almost smooth. Ventral basi-valvular sclerite about twice as long as wide. Spermatheca with a wide, curved, pre-apical and a narrow, apical diverticulum.

*Bumacris*, being much related to the genus *Oxya* (compare the dorso-posterior process of the cingular rami), is placed naturally in the subfamily Oxyinae.

The genus *Bumacris* is distributed throughout the Solomon Islands.

Key to the species and subspecies of *Bumacris* (s.str.)

1. Elytron with a distinct yellow streak along the anal fold (CU<sub>2</sub> - IA) . . . . . 2
- Elytron without a streak along the anal fold . . . . . 5
2. Lateral pronotal lobe unicolorous yellow, orange or red . . . . . 3
- Lateral pronotal lobe divided longitudinally into a black upper and a yellow lower part (Santa Isabel I., San Jorge I.) . . . . . *leveri* Uvarov (p. 148)
3. Femora scarlet red. Head large, eyes slightly prominent (Bougainville I.) . . . . .
- . . . . . *bougainvillea* Ramme (p. 147)
- Femora cadmium yellow or orange. Head small, eyes more prominent . . . . . 4
4. Femora cadmium yellow (Kolombangara I.) . . . . .
- . . . . . *pagdeni kolombangarae* subsp. nov. (p. 151)
- Femora cadmium orange (New Georgia I.) . . . . .
- . . . . . *pagdeni munda* subsp. nov. (p. 151)
5. Tegmina abbreviated, not reaching tip of abdomen (Guadalcanal I.) . . . . .
- . . . . . *monotona* C. Willemse (p. 144)
- Tegmina well developed, reaching tip of abdomen . . . . . 6
6. Pronotum unicolorous black (Rendova I.) . . . . . *rendovae* spec. nov. (p. 146)
- Pronotum differently coloured . . . . . 7
7. Lateral pronotal lobe unicolorous yellow (Vella Lavella I.) . . . . .
- . . . . . *pagdeni pagdeni* C. Willemse (p. 150)
- Lateral pronotal lobe partly black and yellow, orange or red (Malaita I., Santa Isabel I., Florida I., Guadalcanal I.) . . . . . *flavomaculata* C. Willemse (p. 142)

***Bumacris* (*Bumacris*) *flavomaculata* C. Willemse, 1931**

(Fig. 14—24, 30—31, Pl. 3 Fig. 33, Pl. 4 Fig. 44)

*Bumacris flavomaculata* C. Willemse, 1931: 350, Fig. 4; 1935: 166; Ramme, 1941: 119; C. Willemse, 1956: 177, 179; F. Willemse, 1966a: 37; 1966b: 63; Kevan, 1966: 406.

Material studied: ♂ holotype, labelled: Buma (Malaita) Salomonen. V. 29 E. Paravicini, *Bumacris flavomaculata* nov. g. nov. sp. Det. C. Willemse, Type (NMB); 1 juv. ♀ with similar locality and identification labels (NMM).

Additional material: Malaita I.: Dala, 50 m, 4. (1 ♀) & 6—8. (3 ♂, 2 ♀) & 9—14. (2 ♂, 2 ♀) & 20. (1 ♂) & 21. (1 ♂) & 22. (1 ♂) VI. 1964, J. & M. Sedlacek (BPBM); Dala, 50 m, 20. VI. 1964, R. Straatman (1 ♀) (BPBM); Dala, 16. II. 1965, P. Greenslade (1 ♂) (BMNH); Auki, 2—20 m, 22. IX. 1957, J. L. Gressitt (1 ♂, 1 ♀) (BPBM); Auki, 2. V. 1963, M. McQuillan, cacao (1 ♂) (BMNH); 3 km N. of Auki, 30 m, 2. VI. 1964, J. & M. Sedlacek (1 ♀) (BPBM); 6 km N. of Auki, 60 m, 3. VI. 1964, J. & M. Sedlacek (1 ♂) (BPBM); E. of Kwalo (E. of Auki), 350 m, 29. IX. 1957, J. L. Gressitt (1 ♂, 2 ♀) (BPBM); Tangtalau - Kwalo, 200—350 m, 30. IX. 1957, J. L. Gressitt (1 ♀) (BPBM); Tangtalau, 150—200 m, 25. IX. 1957, J. L. Gressitt (1 ♀) (BPBM); Nuna Lava, 25 km NE. of Dala, 200 m, 16. VI. 1964, J. Sedlacek (1 ♂) (BPBM); Fulisago-Maelegwasu, 26. V. 1955, E. S. Brown (1 ♀) (BMNH); Baunani, 7. (1 ♂, 1 ♀) & 10. IX. (1 ♂) 1954 & 31. V. 1955 (1 ♀), E. S. Brown (BMNH); Haffina, 27. V. 1955, E. S. Brown (2 juv. ♀) (BMNH); Tanava, 22. I. 1965, P. Greenslade (1 ♀) (BMNH); Talifia, 28. I. 1965,

P. J. M. Greenslade (1 ♂) (BMNH); Sisiuva (?correct spelling), 26. I. 1965, P. J. M. Greenslade (1 ♂, 3 ♀) (BMNH); Araki, 24. IX. 1963, M. McQuillan (1 ♂) (BMNH); Makwanu, 25. IX. 1963, M. McQuillan (1 ♂, 2 ♀, 1 juv. ♀) (BMNH); Rerende, 24. IX. 1963, M. McQuillan (2 ♀) (BMNH).

Guadalcanal I.: Lunga R. (bridge), 3. IX. 1960, C. W. O'Brien (3 ♀) (BPBM).

Florida Is.: Nggela Is., Halaita, low herbage, 20. III. 1934, H. T. Pagden (1 ♀) (BMNH); Big Nggela, Sandflypassage, 14. I. 1964, P. Greenslade (1 ♀, 1 juv. ♀) (BMNH); Hanavaivine, Small Nggela, 15. IX. 1960, C. W. O'Brien (1 ♀) (BPBM).

Santa Isabel I.: Molao, 29. VI. 1960, C. W. O'Brien (2 ♂) (BPBM); Tatamba, 10. X. 1964, R. Straatman (1 ♀) (BPBM); Tatamba, forest and vegetation behind resthouse, 2. X. 1965, Roy. Soc. Exped. (1 ♂) (BMNH).

### Redescription.

♂ (Pl. 3 Fig. 33). Robust. Integument moderately pitted. Head large. Interocular distance half as wide as greatest width of fastigium verticis. Eyes rather prominent. Occiput rather convex. Face moderately reclinate. Mouthparts and cheeks well developed, wide.

Pronotum with prozona parallel, metazona slightly divergent. Pronotal dorsum with prozona slightly gibbose, metazona more flattened, posterior margin angularly rounded. Lateral pronotal lobe with strong sulci; areas between sulci strongly gibbose and with irregular, strong impressions. Posterior angle of lower margin slightly produced.

Tegmina reaching tip of abdomen. Elytron wide, precostal lobe strongly developed, apex widely rounded.

Apex of subgenital plate slightly produced (Fig. 17—18). Cerci with apex obtusely pointed. Dorso-posterior process of cingular rami robust, apex widely rounded. Apical penis valve elongate, in ventro-posterior aspect flattened and gradually narrowing towards the rounded apex (Fig. 19—24).

Colour black and yellow. Antennae yellowish, brown, bluish or black; proximal segments paler. Head cadmium yellow; mouthparts black, sometimes with yellow dots; clypeal margin, lower and posterior margins of cheek and margins of eye black; face around and below antennal base with a black spot, the left and right one connected by a black spot on the frontal ridge at level of median ocellus; fastigium verticis, vertex between eyes, and from there a median band over the occiput strongly widening towards the pronotum, black; behind the eye a wide black band.

Pronotum cadmium yellow; dorsum with a broad, median, black band, slightly widening posteriorly and usually covering the metazona almost completely; upper part of metazona of lateral lobe black; gibbose areas between sulci of lateral lobe cadmium yellow, cadmium orange or scarlet red.

First episternum black. Pleurae, meso- and metasterna dark brown or black. Elytron yellowish brown, more greenish or bluish brown apically. Wings hyaline, colourless. Abdomen with tergites yellowish, brownish or blackish, and the sternites darker brown or black.

Fore and middle legs cadmium yellow, with apex of femora, apex and base of tibiae and third tarsal segments, black or dark brown. Hind femur black, or partly black and yellowish brown. Hind knee dark brown or black, lower lobes sometimes dark blue. Base of hind tibia black or dark blue, a wide postgenicular ring cadmium yellow and

the distal part completely black or dark blue, or partly yellowish brown with black margins. Spines black. Hind tarsus with first and second segments yellow, third segment and claws black or dark blue, and pulvillus yellowish.

♀ (Pl. 4 Fig. 44). Larger and more robust than the male. Pronotal dorsum, in profile, slightly constricted at the fourth sulcus, metazona flat and prozona slightly gibbose. Areas between sulci of pronotal lateral lobe strongly gibbose. Precostal lobe of elytron strong. Hind margin of subgenital plate (Fig. 31), truncate in the very middle and, on each side, with one short tooth; occasionally, more laterally, with some smaller teeth. Dorsal aspect of subgenital plate as in Fig. 16. Ovipositor valves (Fig. 14—15, 30—31) long, slender, keels slightly spinulose; dorsum of upper valve shallowly sulcate, lateral keel present from base to apex. Coloration as in male.

#### Variation.

Morphological variation is moderately, that in colour more distinctly developed. The black band over the occiput varies in width. The face may be almost completely black. The black band over the pronotal dorsum may be much narrower, resulting in wider yellow lateral parts of the metazona. The black pigmentation of the upper part of the metazona of the pronotal lateral lobe varies from almost lacking to extending much anteriorly over the prozona. The elytron may be cadmium yellow. The hind femur may be brown. The fore and middle femora of the males from Santa Isabel I. are completely black.

Measurements: ♂ holotype: body 23.5; pronotum 5.3; elytron 15.5; hind femur 14.3; other material: body ♂ 24.7—27.2, ♀ 30.4—35.0; pronotum ♂ 5.2—6.0, ♀ 7.2—8.1; elytron ♂ 15.0—17.8, ♀ 18.1—19.9; hind femur ♂ 14.8—16.2, ♀ 18.1—20.0.

Distribution. Solomon Is.: Malaita I., Guadalcanal I., Florida Is., Santa Isabel I.

Discussion. The species is well-defined by the strongly gibbose areas of the pronotal lateral lobe, wide elytron, phallic complex and colour. The phallic complex resembles that of *pagdeni* and *monotona*. Previously, the species has been recorded only from Malaita I. and Nggela I. On Guadalcanal I. *flavomaculata* occurs together with *monotona* and on Santa Isabel I. with *leveri*. The type locality of the latter is Tatamba, whence *flavomaculata* is now also known.

#### **Bumacris (Bumacris) monotona** C. Willemse, 1935

(Fig. 25, 32—33, Pl. 4 Fig. 40)

*Bumacris monotona* C. Willemse, 1935: 166; Ramme, 1941: 119; C. Willemse, 1956: 177, 179; F. Willemse, 1966a: 37.

Material studied: ♀ holotype, labelled: Solomon Islands Guadalcanal Is Tslouia 6.ii.1934 H. T. Pagden, 700, *Bumacris monotona* nov. sp. Dr. C. Willemse det., 1935, Type (BMNH). The specimen lacks the left hind leg.

Additional material: Guadalcanal I. (all BPBM): Kiwi Creek, 24. VIII. 1944, H. E. Milliron (1 ♂); Metanikan River (Mth.), 21. V. (1 ♂, 1 ♀) & 10. VI. (1 ♀) 1944, H. E. Milliron; Poha R., 5 m, 2.VII.1956, J. L. Gressitt (1 ♀); Suta (Suta — Gold Ridge) Jonapau Mt., 1000 m, 29. VI. 1956, J. L. Gressitt (1 ♀) Tenamba, 7. X. 1957, J. L. Gressitt (1 ♂); same island (all BMNH): Mt. Austin, 30. XII. 1962, R. W. Paine (1 ♂, 1 ♀); Avuliga (? correct spelling), 26.IV. 1956, E. S. Brown (1 ♂); Nalimbui



R., 12. IX. (1 ♂, 2 ♀) & 23. XII. (3 ♂, 4 ♀, 1 juv. ♀) 1963, M. McQuillan; Suta, 27. VI. 1956, E. S. Brown (2 ♂, 1 juv. ♀); Kukum, 12. IV. 1956, E. S. Brown (1 ♀); Gold Ridge, 20. III. 1955, E. S. Brown (2 ♀); Nalimbiu Ridge, 10.III.1955, E. S. Brown (1 ♀); Tenavatu, 13.VII.1954, E. S. Brown (1 ♂); Tapenanje, 21—23. XII. (1 ♀) & 10—15.XII. (1 ♂) 1953, J. D. Bradley; Sutakiki R., 28.VI.1956, E. S. Brown (1 ♂, 1 ♀).

### Redescription.

♂ (Pl. 4 Fig. 40). Smaller and less robust than the type species. Integument slightly pitted. Head smaller than in the latter, lateral carinulae of fastigium verticis less developed.

Pronotum with prozona parallel, metazona slightly divergent. Pronotal dorsum slightly saddle-shaped, prozona not gibbose, posterior margin more broadly, less angularly, rounded. Sulci less strong than in the type species. Areas between sulci of lateral lobe scarcely gibbose. Posterior angle of lower margin slightly produced.

Tegmina abbreviated, reaching about middle of hind femur, not nearly reaching tip of abdomen. Precostal lobe of elytron strong, apex of elytron narrower than in the type species.

Abdominal terminalia as in the type species, but smaller. Dorso-posterior process of cingular rami narrowly triangular, apex subacute. Apical penis valve more slender and smaller (Fig. 25).

Colour yellowish green. Antennae bluish black, proximal segments dorsally and tip of flagellum yellowish green. Head lemon yellow; lower and hind margins of cheeks and lower margin of eye black; mouthparts yellow, yellowish green or green; face, just below median ocellus with indication of a small black dot on each side; fastigium verticis yellow or dirty yellow; vertex between eyes, occiput, and area behind eye, completely black.

Pronotum dark or pale yellowish green, not quite unicoloured; sometimes, along anterior margin of pronotal dorsum an indistinct yellow lateral spot; lateral pronotal lobe unicoloured, but usually with two lemon yellow spots: a small one at lower anterior angle, and a larger one along lower margin between third sulcus and posterior margin.

First episternum as the pronotum. Pleurae black, except ventral yellow spots on the second and third episterna. Meso- and metasterna black or dark brown and yellow, the lobes usually yellow. Elytron pale or dark greenish with a shade of violaceous or metallic blue. Wings hyaline, with a shade of metallic blue. Abdomen yellowish brown, mottled with dark brown; hind margin of segments sometimes yellowish green. Cerci and supra-anal plate blackish brown, tip of supra-anal plate yellowish.

Fore and middle legs yellowish green or olivaceous green, the tibiae with a blue flush dorsally; knees bluish. Hind femur yellowish, yellowish green or olivaceous green; hind knee bluish, crescents dark brown or black. Hind tibia with basal part black, rest of the proximal half yellowish green, distal half similar or more blackish brown or blackish blue. Hind tarsus yellowish, except for a blue flush over the first segment dorsally, the apex of the third segment blue.

♀. Larger and more robust than the male. Pronotal dorsum distinctly saddle-shaped, the deepest point at the third or fourth sulcus. Precostal lobe of elytron strong. Subgenital plate (Fig. 33) as in the type species, but teeth of hind margin either much shorter or

almost lacking. Ovipositor valves (Fig. 32—33) as in the type species, but shorter; keels more finely spinulose. Colour as in male.

#### Variation.

Morphological variation is unapparent, except for the body-length. Colour of pronotum and elytra rather variable, as described above.

Measurements: ♀ holotype: body 29.1; pronotum 7.0; elytron 14.9; hind femur 20.0; other material: body ♂ 19.4—21.0, ♀ 23.0—29.8; pronotum ♂ 4.0—4.8, ♀ 5.5—7.0; elytron ♂ 7.7—10.6, ♀ 10.9—15.1; hind femur ♂ 11.4—14.2, ♀ 15.1—19.8.

Distribution. Solomon Is.: Guadalcanal I.

Discussion. The species is well-defined by the abbreviated tegmina, saddle-shaped pronotum, slightly pitted integument, phallic complex and colour. The dorso-posterior process of the cingular rami is the narrowest and the apical penis valves are the smallest of the genus. The species has been previously recorded only from the female holotype.

### ***Bumacris (Bumacris) rendovae* spec. nov.**

(Fig. 26, Pl. 3 Fig. 35)

Material studied: ♂ holotype, labelled: Solomon Is., Rendova, 9.X.1954, E. S. Brown 1268A (BMNH).

#### Description.

♂ (Pl. 3 Fig. 35). Integument moderately pitted. Head differing from that of the type species by a more reclinate face and less developed cheeks and mouthparts.

Pronotum with prozona parallel, metazona slightly divergent. Pronotal dorsum with prozona distinctly gibbose, metazona more flattened, and posterior margin rather produced posteriorly and, in the middle, angularly rounded. Lateral lobe with moderate sulci; areas between sulci distinctly gibbose and with irregular impressions. Posterior angle of lower margin about rectangular, not produced.

Tegmina almost reaching tip of abdomen. Precostal lobe of elytron moderate, apex of elytron narrower than in the type species.

Abdominal terminalia almost as in the type species, but tip of apical penis valve different, being truncate and slightly excised (Fig. 26).

Colour black and yellowish green. Antennae dark brown, scape and pedicle yellowish. Head cadmium yellow; fastigium verticis, vertex, occiput and area behind eye completely black; frontal ridge between antennal base black; clypeal margin, lower margin of cheek, and anterior margin of eye black; mouthparts yellow and black; face, just below median ocellus, with pair of small black spots.

Pronotum and first episternum completely bluish black. Pleurae bluish black, except ventral yellow spots on the second and third episterna. Meso- and metasterna yellow and blackish brown. Abdomen yellowish brown. Elytron yellowish green. Wings hyaline with a faint tinge of metallic blue.

All legs bluish black, but pulvilli, first and second tarsal segments and claws yellowish brown. Crescents of hind knee dark chestnut brown. Hind tibial spines coloured similarly to hind tibia, tips black.

♀. Unknown.

Measurements: ♂ holotype: body 24.9; pronotum 6.6; elytron 15.6; hind femur 17.1.

Distribution. Solomon Is.: Rendova I.

Discussion. The species is well-defined by the form of the pronotum, apex of phallus, and colour. Except that of the pronotum and legs, the colour is much as in *monotona*. No other species of the genus are known from Rendova I.

***Bumacris* (*Bumacris*) *bougainvillea* Ramme, 1941**

(Fig. 27, 34—35, Pl. 3 Fig. 34, Pl. 4 Fig. 45)

*Bumacris bougainvillea* Ramme, 1941: 118, 218; C. Willemse, 1956: 177, 178.

Material studied: ♂ holotype, labelled: Bougainville Nauer, Typus (ZMHU). The specimen lacks the left elytron and right antenna.

Additional material: Solomon Is., Bougainville I.: Mutahi, 18 km SE. of Tinputz, 700 m, 1—7. III. 1968, R. Straatman (1 ♀); Kukugai Vill., 150 m, X. (1 ♂) & XII. (1 ♀) 1960, W. W. Brandt; Mumurai, 8. VI. 1956, J. L. Gressitt (1 ♀); Kokure, 690 m, 10—18. VI. 1956, E. J. Ford Jr. (3 ♂, 5 ♀); Kokure, nr. Crown Prince Ra., 900 m, 8. VI. 1956, J. L. Gressitt (1 ♂, 2 ♀); Guaka, 100 m, 19. VI. 1956, E. J. Ford Jr. (1 ♀) (all BPBM).

**Redescription.**

♂ (Pl. 3 Fig. 34). Integument moderately pitted. Head much as in the type species.

Pronotum with prozona parallel, metazona slightly divergent. Pronotal dorsum with prozona scarcely gibbose and metazona more flattened, the posterior margin as in the type species. Lateral pronotal lobe slightly longer than high; sulci moderately strong; areas between sulci scarcely gibbose and with irregular impressions.

Tegmina reaching base of hind knee. Elytron narrower, precostal lobe less strongly developed and apex narrower, than in the type species.

Abdominal terminalia also similar, but tip of apical penis valve different, bearing a spoon-like excavation (Fig. 27).

Colour black, orange or red. Antennae cadmium orange, joints of segments dark. Head cadmium orange; clypeal margin, lower and hind margins of the cheek, and eye-margins black; mouthparts yellow and blackish; fastigium verticis, vertex between eyes, and from there a strongly widening band over the occiput, black.

Pronotal dorsum black, lateral lobe cadmium orange or scarlet red. Sterna and pleurae orange or scarlet red, margins and sutures black. Abdomen yellowish brown. Elytron violaceous or brownish black, with a yellow streak along anal fold. Wing hyaline with a faint tinge of violaceous.

Femora scarlet red. Hind femur before the knee more cadmium yellow. Knees and base of tibiae black. Hind tibia cadmium orange, but margins distally and occasionally the dorsal side also, blackish green. Spines blackish, tips black. Hind tarsus cadmium orange.

♀ (Pl. 4 Fig. 45). Larger than the male. Pronotum slightly saddle-shaped. Abdominal terminalia as in the type species, but ovipositor valves (Fig. 34—35) slightly shorter and wider; dorsum of upper valve without, or with poorly developed, lateral keel. Colour as in male.

Variation in morphology and colour is slight. The holotype, rather more yellow than orange, is slightly discoloured.

Measurements: ♂ holotype: body 24.6; pronotum 5.6; elytron 19.2; hind femur 15.6; other material: body ♂ 24.8—27.8, ♀ 30.0—33.9; pronotum ♂ 5.6—6.0, ♀ 7.0—7.8; elytron ♂ 16.9—19.0, ♀ 21.1—23.8; hind femur ♂ 14.2—16.2, ♀ 18.1—19.2.

Distribution. Solomon Is.: Bougainville I.

Discussion. The species is well-defined by the shape of the pronotum, apex of phallus and colour. The apex of the phallus resembles that of *leveri*. Up to now, only the male holotype has been recorded. No other species of the genus are known from Bougainville I.

### **Bumacris (Bumacris) leveri** Uvarov, 1937

(Fig. 28, 36—37, Pl. 4 Fig. 39)

*Bumacris leveri* Uvarov, 1937: 17; Ramme, 1941: 119; C. Willemse, 1956: 177.

*Bumacris georgica* C. Willemse, 1962: 51, Fig. 4; F. Willemse, 1966a: 37. **Syn. nov.**

Material studied: ♀ holotype of *leveri*, labelled: Solomon Is. Isabel Tatamba 30.VI. 1935, R. A. Lever, Calamus leaf, 4799, *Bumacris leveri* sp. n. Det. B. Uvarov 1936, Type (BMNH). The specimen lacks the left hind leg and right antenna.

♂ holotype of *georgica*, labelled: Muséum Paris Arch. Salomon I. San George Hombron 1841, 1674 41, *Bumacris georgica* n. sp. Det. C. Willemse (MNHN). The specimen lacks both middle legs and antennae, and the left tegmina are spread.

Additional material: Santa Isabel I.: Tatamba, 21. III. (1 juv. ♀) & 24. (2 ♀) & 27. (1 ♂, 1 ♀) V. 1963 & 7. II. 1964 (1 juv. ♂), M. McQuillan; Rasa, 9. (1 ♀) & 20. (1 ♂) III. & 23. (1 ♀) & 30. (2 ♂) IV. 1963, M. McQuillan; Tolana, 5. III. 1964, M. McQuillan (1 juv. ♀); Burta, 2. VIII. 1962, P. Greenslade (1 ♂); 3 mls. W. of Cockatoo Is., 700', laterite slope and fringe of Casuarina forest, 20. IX. 1965, Roy. Soc. Exped. (1 ♀) (all BMNH).

San Jorge I.: 2. III. 1962, P. Greenslade (1 ♂) (BMNH).

### Redescription.

♂ (Pl. 4 Fig. 39). Slender. Integument moderately pitted. Head not large, cheeks and mouthparts of normal proportions, eyes slightly prominent.

Pronotum comparatively long, prozona parallel, metazona slightly divergent. Prozona distinctly gibbose both dorsally and laterally. Lateral pronotal lobe distinctly longer than high; sulci moderate; gibbose areas with moderate impressions. Margins of pronotum and angle of lateral lobe as in the type species.

Tegmina reaching the hind knee. Elytron longer and narrower, the precostal lobe smaller and the apex narrower, than in the type species. Legs slender.

Abdominal terminalia similar, but apical penis valve distinct (Fig. 28), with spoon-like excavated tip.

Colour black, yellow and red. Antennae blackish green. Head cadmium yellow; face with the frontal ridge, and a large triangular spot, from the clypeal margin narrowing towards median ocellus, black; mouthparts for the greater part black; lower and hind



margins of the cheek and eye-margins black; fastigium verticis, vertex between the eyes and from there a narrow median stripe, widening posteriorly of the occiput, black; behind the eye a wide black band.

Pronotum cadmium yellow, dorsum with a broad median band and most of the upper part of the lateral lobe, black. Upper half of pleurae black, lower half cadmium yellow. Meso- and metasterna black, blackish brown and yellow. Abdomen dark brown, tergites laterally more yellowish. Elytron and wing azure blue; elytron with a yellow streak along anal fold.

Femora dirty scarlet red. Fore and middle knees, tibiae and tarsi blackish green. Hind femur with indistinct antegenicular yellowish ring. Hind knee black. Hind tibia with the base black, proximal half bluish green and distal half azure blue. Tibial spines tipped with black. Hind tarsus pale blue.

♀. Larger than male. Pronotal dorsum with prozona distinctly gibbose, metazona more flattened; in profile, slightly constricted at the fourth sulcus. Abdominal terminalia as in the type species, except for the ovipositor. Ovipositor valves (Fig. 36—37) slender, long and narrow, the keels almost smooth; dorsum of upper valve not sulcate and gradually narrowing towards apex.

Variation not apparent. A male from Burta, Santa Isabel I. is more robust; the slight difference in colour of the San Jorge I. material is discussed below.

Measurements: ♀ holotype *leveri*: body 36.2; pronotum 9.0; elytron 23.1; hind femur 22.0; other material: body ♂ 30.0—31.3, ♀ 36.7—39.4; pronotum ♂ 6.7—7.0, ♀ 8.5—8.9; elytron ♂ 22.0—22.2, ♀ 23.6—24.6; hind femur ♂ 18.8—19.0, ♀ 22.0—22.1.

Distribution. Solomon Is.: Santa Isabel I., San Jorge I.

Discussion. The slender general appearance, shape of pronotum, ovipositor valves, apex of phallus, and the colour, are characteristic features of this species. Up to now, *leveri* was only known from the female holotype. The apex of phallus resembles that of *bougainvillea*. At the type-locality of *leveri* also *flavomaculata* was found.

*B. georgica* was described after a single male from San Jorge I. A second, topotypic, male is before me. Morphologically, both males are similar to *leveri*. The only difference between them is found in the colour of the elytron and the hind tibia, which are bluish green in *georgica*, azure blue in *leveri*, both *georgica* males being, moreover, slightly discoloured. On the basis of this slight difference, these taxa are here considered synonymous.

### ***Bumacris* (*Bumacris*) *pagdeni* C. Willemse, 1935**

This species was described after material from Vella Lavella. I have before me material from two other islands, Kolombangara I. and New Georgia I. In many respects specimens from these islands are similar, resembling *pagdeni* as well. Other characters are, however, quite distinctive. The material from each of these islands being clearly recognizable, a separation into subspecies seems to be justified. A key is given above.

**Bumacris (Bumacris) pagdeni pagdeni C. Willemse, 1935**

(Fig. 29, 38—39, Pl. 3 Fig. 36, Pl. 4 Fig. 41)

*Bumacris pagdeni* C. Willemse, 1935: 167; Ramme, 1941: 119; C. Willemse, 1956: 177, 178; F. Willemse, 1966a: 37.

Material studied: ♂ holotype, labelled: Solomon Is Vella Lavella, Liangi H. T. Pagden 20.V.1934 jungle 1661, *Bumacris pagdeni* nov. sp. Dr. C. Willemse det., 1935, Type (BMNH). The specimen lacks the right fore leg and both antennae.

Additional material: Vella Lavella: 30.VIII.1964, M. McQuillan (1 ♂, 2 ♀) (BMNH); Ulo Crater, 10 m, 7. (1 ♀) & XII. (2 ♀, 1 juv. ♀) 1963, P. Shanahan (BPBM); Kundurumbangara, 80 m, 15. XI. 1963, P. Shanahan (1 ♀) (BPBM).

**Redescription.**

♂ (Pl. 3 Fig. 36). Body slightly tapering. Integument moderately pitted. Head of normal size; face distinctly reclinate, eyes rather prominent, occiput rather convex, interocular distance slightly less than half the greatest width of the fastigium verticis.

Pronotum subcylindrical, divergent throughout, no gibbose areas. Pronotal dorsum straight in profile, posterior margin moderately angularly rounded. Sulci moderate.

Tegmina reaching base of hind knee. Elytron narrower than in the type species, with well developed precostal lobe, and narrowly rounded apex.

Abdominal terminalia similar, but apical penis valve longer and more elongate (Fig. 29).

Colour cadmium yellow, greenish and bluish black. Antennae yellowish or olivaceous black. Head cadmium yellow; face heavily mottled with black, or only the sulcus of the frontal ridge and two spots below the antennal base, black; mouthparts black and yellow; clypeal margin, lower and hind margins of the cheek, and the eye-margins, black; fastigium verticis, vertex between the eyes and from there a strongly widening median band over the occiput, black.

Pronotum cadmium yellow, dorsum with a wide median blackish band, sometimes less dark on the metazona; sulci and most of the surface impressions blackish.

First episternum, meso- and metasterna black. Pleurae for the greater part cadmium yellow. Abdomen dark brown, tergites laterally yellowish brown. Elytron greenish or brownish black. Wings hyaline, basally faintly bluish.

Fore and middle legs cadmium yellow, but knees, base and apex of tibiae and all tarsi, blackish. Hind femur cadmium yellow. Hind knee blue, crescents dark chestnut brown. Hind tibia blue, with indistinct yellowish postgenicular ring; spines blue, tips black. Hind tarsus pale or dark brown.

♀ (Pl. 4 Fig. 41). Larger than the male. Abdominal terminalia (Fig. 38—39) as in the type species, except one specimen, which has the hind margin of the subgenital plate not truncated apically but pointed and continuous with the egg-guide.

Variation is not noticeable.

Measurements: ♂ holotype: body 24.1; pronotum 5.1; elytron 16.9; hind femur 15.2; other material, only ♀: body 29.1—34.5; pronotum 7.1—8.2; elytron 20.0—22.1; hind femur 18.1—19.2.

Distribution. Solomon Is.: Vella Lavella I.

Discussion. The species is well recognizable, especially by the form of the pronotum.

The phallic complex resembles that of *flavomaculata* and *monotona*, but is slightly different by longer and more elongate apical penis valves. No other species are known from Vella Lavella I.

***Bumacris (Bumacris) pagdeni kolombangarae* subsp. nov.**

(Pl. 4 Fig. 37, 43)

Material studied (all BPBM): ♂ holo- and ♀ allotype, labelled: Solomon Is New Georgia Group, Kolombangara, Iriri 100 m, 30.VI.1964, J. & M. Sedlacek collectors Bishop; paratypes: Solomon Is., New Georgia Gr., Kolombangara I.: Iriri, 2 m, 29. VI. 1964, J. & M. Sedlacek (1 ♂); Pepele, 0—30 m, 31. I. 1964, Shanahan (1 ♂).

**Description.**

♂ ♀ (Pl. 4 Fig. 37, 43). Differs from nominate *pagdeni* by the slightly gibbose prozona of the pronotum. The hind margin of the female subgenital plate as in the type species.

The coloration of the sexes is similar and differs from nominate *pagdeni* by a black upper part of the face, a wider black band over the pronotal dorsum, and the presence of a yellow streak along the anal fold of the elytron.

Marked variation not observed.

Measurements: ♂ holo- and ♀ allotype: body ♂ 26.1, ♀ 31.5; pronotum ♂ 6.0, ♀ 7.8; elytron ♂ 17.2, ♀ 20.1; hind femur ♂ 15.8, ♀ 18.1; other material, only ♂: body 24.1—25.3; pronotum 5.8—6.0; elytron 16.1—16.6; hind femur 15.9—16.1.

Distribution. Solomon Is.: Kolombangara I.

Discussion. Further analysis is needed to establish the categorical rank of this taxon. From Kolombangara I. no other member of the genus is known.

***Bumacris (Bumacris) pagdeni mundaе* subsp. nov.**

(Fig. 40—41, Pl. 4 Fig. 38, 42)

Material studied: ♂ holo-, ♀ allotype, labelled: Solomon Is. New Georgia Group, N. Georgia I., Munda, 1—30 m, 20. VII. 1959, J. L. Gressitt collector (BPBM) (the allotype lacks its right hind leg); paratypes: Solomon Is., New Georgia I.: Munda, 1—30 m, 15.VII.1959, J. L. Gressitt (2 ♂) (BPBM); Munda, 18.VIII.1963, M. McQuillan (1 ♂, 1 ♀, 3 juv. specimens, all slightly discoloured) (BMNH).

**Description.**

♂ ♀ (Pl. 4 Fig. 38, 42). Both sexes differ from nominate *pagdeni* by their distinctly more tapered body, somewhat saddle-shaped pronotum and slightly shorter tegmina. The female terminalia are as in Fig. 40—41.

The colour of both sexes is similar; they differ from nominate *pagdeni* by having black pigmentation on the upper part of the face, a wider black band over the pronotal dorsum, a yellow streak along the anal fold of the elytron, and the femora coloured cadmium orange.

No noticeable variation.

Measurements: ♂ holotype and ♀ allotype: body ♂ 22.5, ♀ 27.2; pronotum ♂ 5.4, ♀ 6.4; elytron ♂ 15.0, ♀ 17.1; hind femur ♂ 14.8, ♀ 18.0; other material, ♂: body 22.1—24.1; pronotum 5.0—5.3; elytron 14.1—15.3; hind femur 14.3—15.1.

Distribution. Solomon Is.: New Georgia I.

Discussion. The distinction between *kolombangarae* and *mundae* is less evident than that between these and nominate *pagdeni*. The more tapering body, somewhat shorter tegmina, slightly dissimilar form of pronotum, and cadmium orange femora in *mundae*, are distinct from *kolombangarae*. From New Georgia I. no other member of the genus is known. As in *kolombangarae*, further study is needed to establish the categorial rank of *mundae*.

### **Bumacris (Cristovalacris) subgen. nov.**

#### **Description.**

♂ ♀. Differs from nominate *Bumacris* as follows. Body short and wide. Integument smooth, except a slightly pitted pronotal metazona. Antennae shorter, about as long as combined length of head and pronotum. Head and eyes comparatively small. Tegmina with sparse venation. Elytron without anal fold, the veins strongly thickened, archedyon throughout. Genitalia as in nominate *Bumacris*.

Type species: *Bumacris (Cristovalacris) venosa* spec. nov.

### **Bumacris (Cristovalacris) venosa spec. nov.**

(Fig. 42—44, Pl. 4 Fig. 46—47)

*Bumacris* sp.? nov. Kevan, 1966: 406.

Material studied: ♂ holotype, labelled: Solomon Is. San Cristoval, Kira Kira, 30. VII. 1960, C. W. O'Brien collector (BPBM); ♀ allotype, labelled: Solomon Is. San Cristoval, Kira Kira, 10. XI. 1964, R. Straatman collector (BPBM); paratypes: Solomon Is., San Cristoval I.: Bweinaniawarikiapu, 12. VIII. 1960, C. W. O'Brien (1 ♀) (BPBM); Waranito R., 175', Camp site, 2317, 1965, P. J. M. Greenslade (1 ♂) (BMNH); Pamua, W. M. Mann, MCZ (1 ♀) (ANSP).

#### **Description.**

♂ (Pl. 4 Fig. 46). Size medium, body slightly tapering. Antennae reaching base of middle leg. Interocular distance less than half the greatest width of fastigium verticis. Lateral facial keel obtuse, almost lacking. Frontal ridge shallowly sulcate, keels indistinct.

Pronotum almost cylindrical, prozona parallel, metazona divergent, lateral 'shoulders' not present. Pronotal dorsum straight in profile, cut by the transverse sulci. Lateral pronotal lobe longer than high; sulci strong, first (submarginal) sulcus extending over dorsum; areas between sulci slightly gibbose. Surface of metazona and of a narrow area along anterior margin, slightly pitted. Anterior margin broadly rounded, posterior margin rather produced posteriorly and, in the middle, angularly rounded. Anterior angle of lateral lobe weakly pronounced, posterior angle rectangular, rounded.



Tegmina reaching middle of hind femora but not apex of abdomen. Elytron with precostal lobe well developed and margins narrowing towards a narrowly rounded apex. Wings subcycloid.

Apex of subgenital plate obtuse. Phallic complex as in nominate *Bumacris*. Apex of phallus (Fig. 42) about as in *monotona*.

Colour olivaceous yellow with black markings. Antennae blackish brown. Head olivaceous yellow; lower part of face with two small black points on each side; frontal ridge in lower half and middle black; upper half of face with narrow black stripe on each side, running parallel to the frontal ridge from the fastigium verticis to level of median ocellus, where left and right stripes are connected by a short, transverse, black stripe; mouthparts black; fastigium verticis, vertex between eyes, occiput and area behind eye black; occiput with two narrow, longitudinal, olivaceous yellow stripes; upper part of cheek and anterior margin of eye black.

Pronotum olivaceous yellow; dorsum black between second and fourth sulci; lateral lobe between first (submarginal) and fourth (typical) sulci, for the greater part black.

First episternum black with a round, olivaceous yellow spot. Pleurae black with large, olivaceous yellow spots. Meso- and metasterna yellow with the sutures and margins black. Elytron brownish with olivaceous yellow veins. Wing colourless, veins brown, the anterior margin slightly infumate. Abdomen blackish brown, but sternites, hind margin of tergites, tip of cercus, and subgenital plate, yellowish.

Coxae blackish brown. Fore and middle femora and tibiae dark red, but apical part of femora, base and apex of tibiae violaceous black. Fore and middle tarsi orange, but third segment and claws violaceous black. Hind femur and tibia violaceous black, crescents dark chestnut brown and a wide postgenicular ring, red. Hind tarsus orange, third segment with a shade of violaceous apically.

♀ (Pl. 4 Fig. 47). Body more tapering and larger than in male. Hind margin of subgenital plate (Fig. 44) slightly excised in the middle, laterally with one larger and some minute spines. Ovipositor valves (Fig. 43) slender, keels spinulose; upper valve shallowly sulcate dorsally. Colour as in male.

No noticeable variation.

Measurements: ♂ holo- and ♀ allotype: body ♂ 19.1, ♀ 27.0; pronotum ♂ 5.5, ♀ 7.6; elytron ♂ 9.2, ♀ 12.8; hind femur ♂ 13.4, ♀ 16.4; other material: body ♂ 21.8, ♀ 25.3—26.0; pronotum ♂ 5.8, ♀ 7.1—7.5; elytron ♂ 10.2, ♀ 12.2—12.4; hind femur ♂ 14.1, ♀ 16.0—16.2.

Distribution. Solomon Is.: San Cristoval I.

Discussion. The species is well-defined and, except for the genitalia, quite distinct among *Bumacris*. The female from Pamua has been recorded by Kevan (1966). As far as known, San Cristoval I. is the southernmost part of the range of the genus. No other member of the genus is known from this island.

#### REFERENCES

- Bolívar, C., 1932. Estudio de un nuevo Acridido de Madagascar del grupo *Cranaë* (Orth. Acrid.). — *Eos* Madr. 8: 391—396, figs.  
Dirsh, V. M., 1956. The phallic complex in Acridoidea (Orthoptera) in relation to taxonomy. — *Trans. R. ent. Soc. Lond.* 108: 223—356, figs.

- Kevan, D. K. McE., 1966. Some Orthoptera-Caelifera from the Philippine, Bismarck and Solomon Islands, with a few interesting records from New Guinea and the Moluccas. — *Ent. Meddr.* 34: 375—420, figs.
- Kirby, W. F., 1910. A synonymic catalogue of Orthoptera. Vol. III. Orthoptera Saltatoria. Part II. (Locustidae vel Acridiidae). — London, pp. i—x, 1—674.
- Ramme, W., 1941. Beiträge zur Kenntnis der Acrididen-Fauna des indo-malayischen und benachbarten Gebiete (Orth.). Mit besonderer Berücksichtigung der Tiergeographie von Celebes. — *Mitt. zool. Mus. Berl.* 25: 1—243, figs.
- Uvarov, B., 1937. Some Acrididae from the Solomon Islands (Orthoptera). — *Treubia* 16: 15—20.
- Walker, F., 1870. Catalogue of the specimens of Dermaptera Saltatoria in the collection of the British Museum. Part IV: 605—810. — London.
- Willemse, C., 1931. Beschreibung von einigen neuen Acridiodea von den Salomon-Inseln. (subfam. Catantopinae, Orthoptera). — *Int. ent. Z.* 25: 333—337, 345—350, figs.
- , 1932. Fauna Buruana. Orthoptera, fam. Acrididae. — *Treubia* 7 (suppl.): 377—383, figs.
- , 1935. Some new Acridiodea (Orth.) from the Solomon Islands. — *Stylops* 4: 165—168, figs.
- , 1956. Synopsis of the Acridoidea of the Indo-Malayan and adjacent regions (Insecta, Orthoptera). Part II. Fam. Acrididae, subfam. Catantopinae, part one. — *Publ. natuurh. Genoot. Limburg* 8 (1955): 1—226, figs.
- , 1962. Descriptions of new and redescrptions of ill known Orthoptera, Part I. — *Natuurh. Maandbl.* 51: 48—55, figs.
- Willemse, F., 1966a. List of new taxa of Orthoptera, described by C. Willemse. — *Publ. natuurh. Genoot. Limburg* 16: 31—42.
- , 1966b. List of the types of Orthoptera in the collection of C. Willemse at the Natuurhistorisch Museum of Maastricht. — *Publ. natuurh. Genoot. Limburg* 16: 43—73.

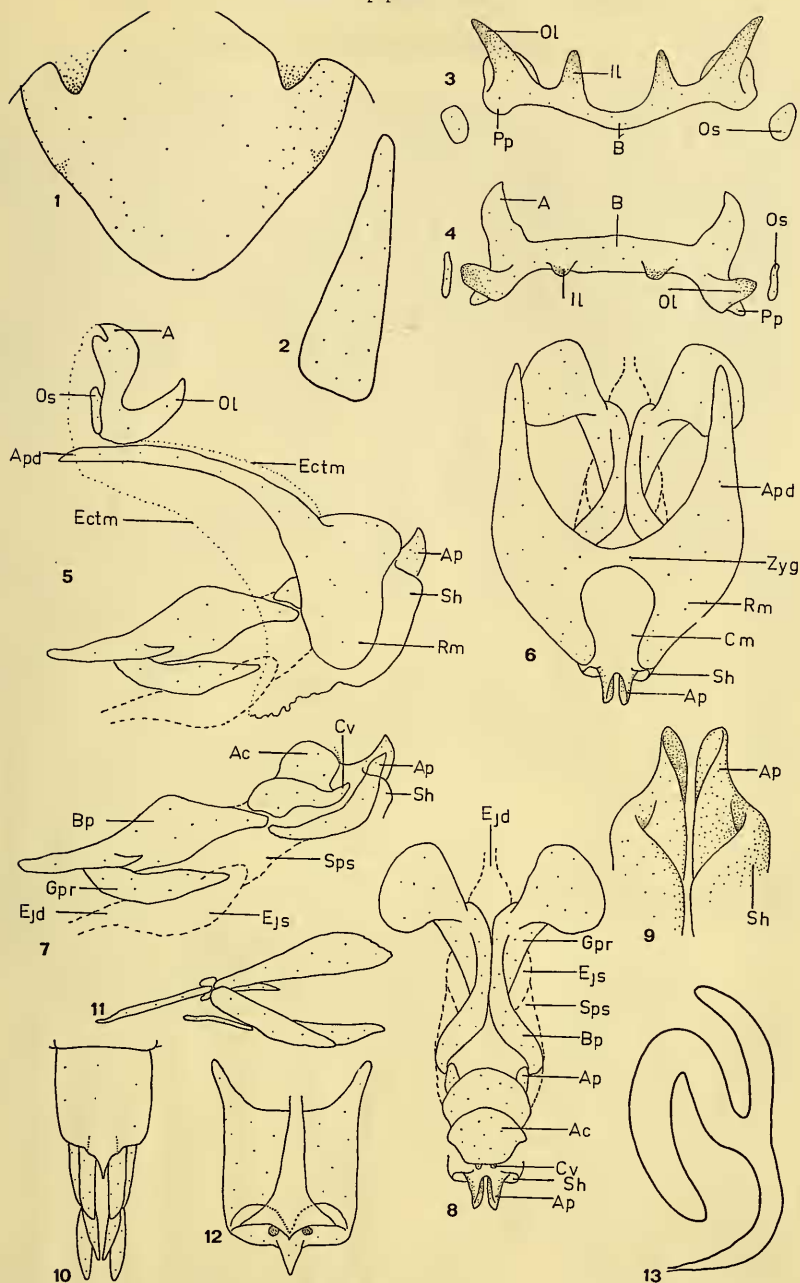


Fig. 1—2. *Opiptacris novageorgica* sp. n., male (paratype): 1, furculae and supra-anal plate; 2, left cercus, lateral view. Fig. 3—9. *Opiptacris uniformis cephalica* subsp. n., male (paratype): 3, epiphallus, posterior view; 4, same, dorsal view; 5, phallic complex, entire, lateral view; 6, same, dorsal view, epiphallus and ectophallic membrane removed; 7, endophallus, lateral view; 8, same, dorsal view; 9, apex of phallus, ventro-posterior view (*A*, ancrae of epiphallus; *Ac*, arch of cingulum; *Ap*, apical valve of penis; *Apd*, apodeme of cingulum; *B*, bridge of epiphallus; *Bp*, basal valve of penis; *Cm*, central ectophallic membrane; *Cv*, cingular valve; *Ectm*, ectophallic membrane; *Ejd*, ejaculatory duct; *Ejs*, ejaculatory sac; *Gpr*, gonopore process; *Il*, inner lophus of epiphallus; *Ol*, outer lophus of epiphallus; *Os*, oval sclerite; *Pp*, posterior process of epiphallus; *Rm*, ramus of cingulum; *Sh*, sheath of penis; *Sps*, spermatophore sac; *Zyg*, zygoma of cingulum). Fig. 10—13. *Opiptacris novageorgica* sp. n., female (paratype): 10, abdominal terminalia, ventral view; 11, ovipositor, lateral view; 12, subgenital plate, dorsal view; 13, spermatheca

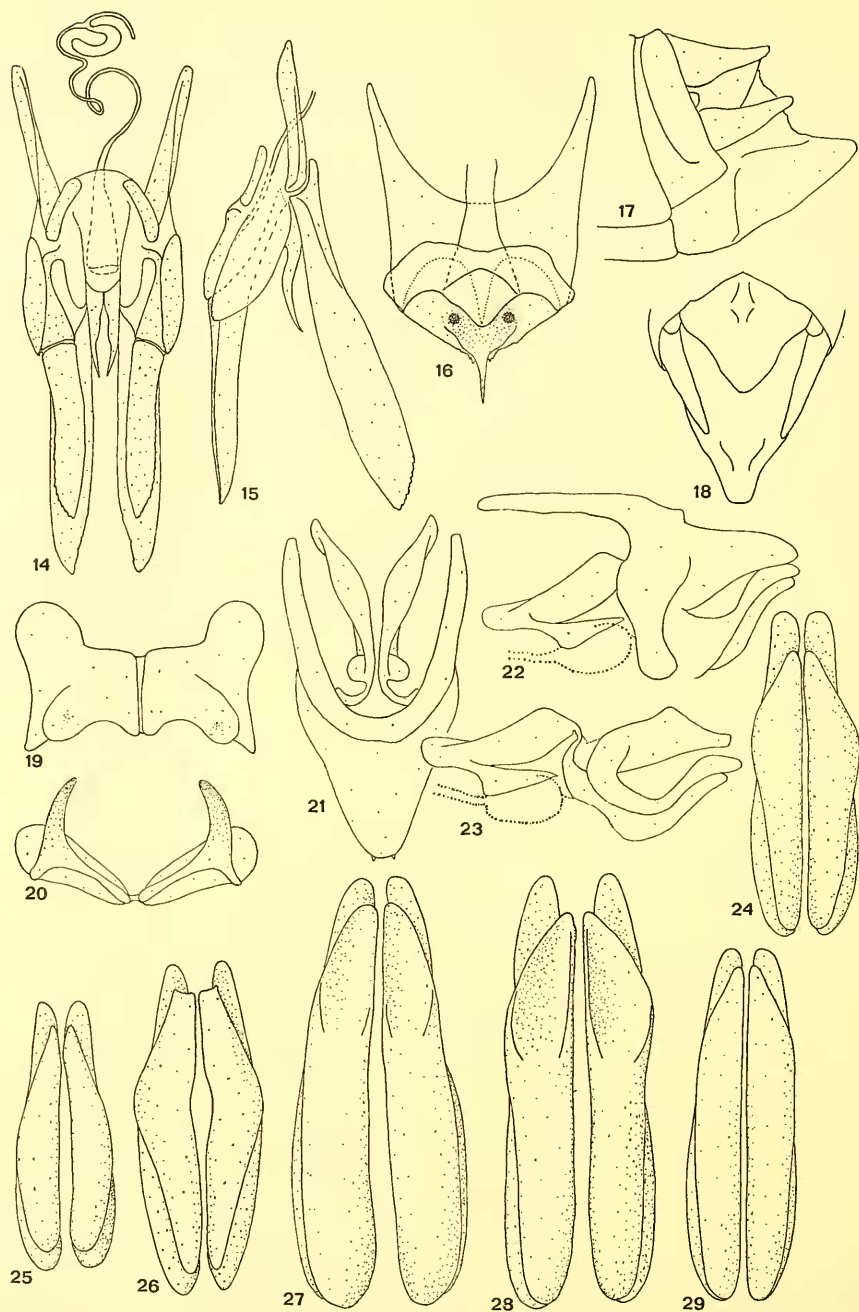


Fig. 14—16. *Bumacris* (s.str.) *flavomaculata* C. Willemse, ♀ (Dala). 14, ovipositor, ventral view; 15, same, lateral view; 16, subgenital plate, dorsal view. Fig. 17—23. Idem, ♂ (Dala). 17, tip of abdomen, lateral view; 18, the same, dorsal view; 19, epiphallus, dorsal view; 20, same, posterior view; 21, phallic complex, dorsal view, epiphallus and ectophallic membrane removed; 22, same, lateral view; 23, endophallus, lateral view. Fig. 24—29. *Bumacris* (s.str.) species, ♂, tips of cingular and apical penis valves, ventro-posterior view. 24, *flavomaculata* C. Willemse (Dala); 25, *monotona* C. Willemse (Trapananije); 26, *rendovae* sp. n. (holotype); 27, *bougainvillea* Ramme (Kukugai Vill.); 28, *leverii* Uvarov (topotype); 29, *pagdeni pagdeni* C. Willemse (holotype)



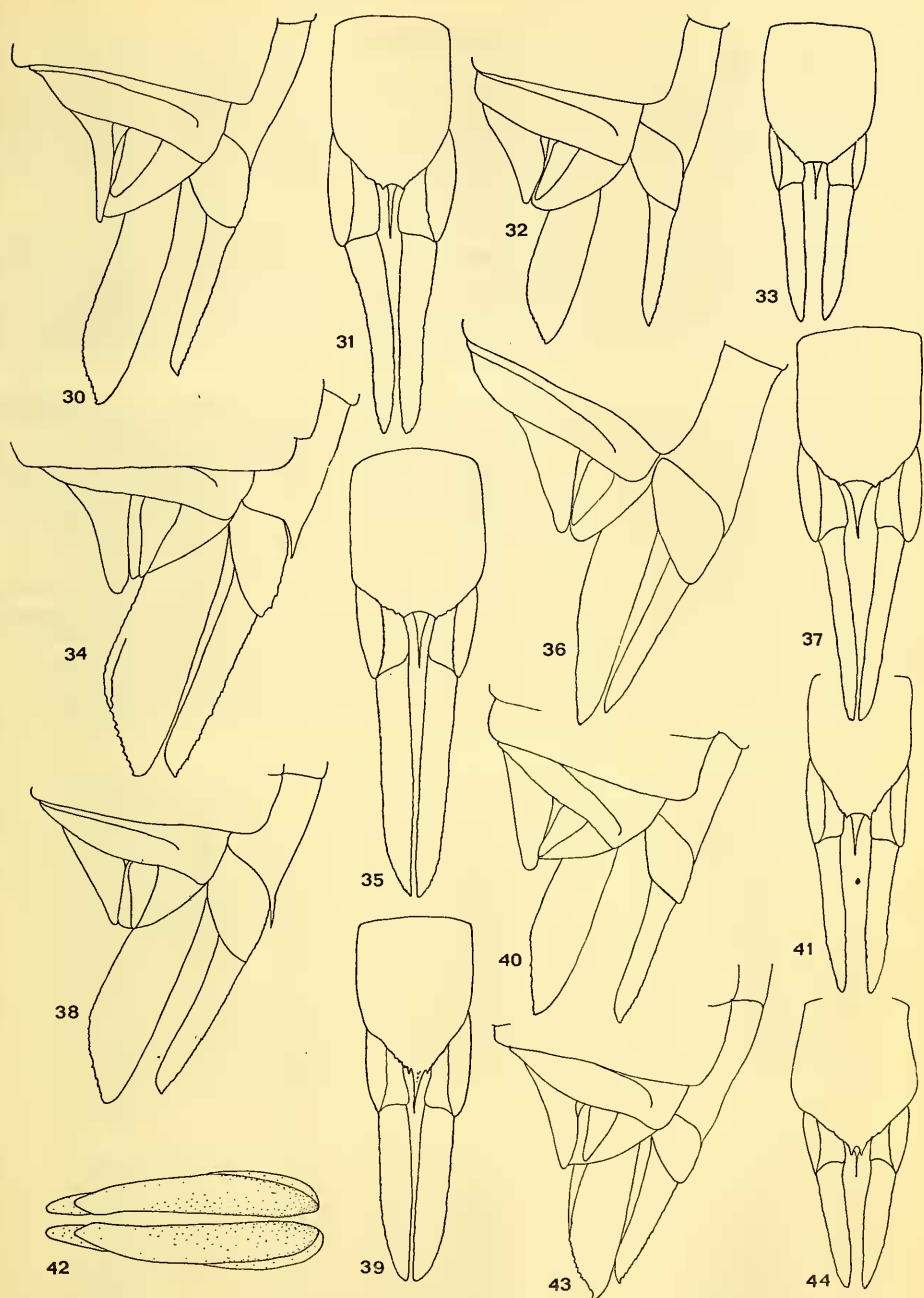


Fig. 30—41. *Bumacris* (s.str.) species, ♀, tip of abdomen in lateral (even numbers) and ventral (odd numbers) view. 30—31, *flavomaculata* C. Willemse (Tangtalau); 32—33, *monotona* C. Willemse (Nalimbiu R.); 34—35, *bougainvillea* Ramme (Mutahi); 36—37, *leveri* Uvarov (topotype); 38—39, *pagdeni pagdeni* C. Willemse (Ulo Crater); 40—41, *pagdeni munda* ssp. n. (allotype). Fig. 42—44. *Bumacris (Cristovalacris) venosa* subgen. & sp. n. 42, ♂ (paratype), cingular and apical penis valves, ventro-posterior view; 43—44, ♀ (allotype), tip of abdomen, lateral view (43), same, ventral view (44)

## EXPLANATION OF PLATES

Fig. 1—12. *Opiptacris* species and subspecies. 1, *bilaris* Walker, ♂ (holotype); 2, *ruficeps ruficeps* (C. Willemse), ♂ (Dala); 3, same, ♀ (Dala); 4, *ruficeps aberrans* ssp. n., ♂ (holotype); 5, same, ♀ (allotype); 6, *tenuis* sp. n., ♂ (holotype); 7, same, ♀ (allotype); 8, *ulagii* Uvarov, ♀ (holotype); 9, *novageorgica* sp. n., ♂ (holotype); 10, same, ♀ (allotype); 11, *vellalavellae* ssp. n., ♂ (holotype); 12, same, ♀ (allotype)

Fig. 13—24. *Opiptacris* species and subspecies. 13, *uniformis georgica* C. Willemse, ♀ (San Jorge); 14, *uniformis cephalica* ssp. n., ♂ (holotype); 15, same, ♀ (allotype); 16, *uniformis tricolor* ssp. n., ♂ (holotype); 17, same, ♀ (allotype); 18, *uniformis bicolor* ssp. n., ♂ (holotype); 19, same, ♀ (allotype); 20, *uniformis striata* ssp. n., ♂ (holotype); 21, same, ♀ (allotype); 22, *choiseulensis* sp. n., ♂ (holotype); 23, same, ♀ (allotype); 24, *unicolor* sp. n., ♂ (holotype)

Fig. 25—32. *Opiptacris* species and subspecies. 25, *unicolor* sp. n., ♀ (allotype); 26, *bougainvillea bougainvillea* Ramme, ♂ (Mutahi); 27, same, ♀ (Mutahi); 28, *bougainvillea femorata* ssp. n., ♂ (holotype); 29, same, ♀ (allotype); 30, *bougainvillea fauroensis* ssp. n., ♂ (holotype); 31, *castanea* Kevan, ♀ (holotype); 32, *alata* sp. n., ♂ (holotype). Fig. 33—36. *Bumacris* (s.str.) species. 33, *flavomaculata* C. Willemse, ♂ (E. of Kwalo); 34, *bougainvillea* Ramme, ♂ (Kokure); 35, *rendovae* sp. n., ♂ (holotype); 36, *pagdeni pagdeni* C. Willemse, ♂ (Vella Lavella, M. McQuillan)

Fig. 37—45. *Bumacris* (s.str.) species. 37, *pagdeni kolombangarae* ssp. n., ♂ (paratype, Iriri); 38, *pagdeni mundaе* ssp. n., ♂ (paratype); 39, *leveri* Uvarov, ♂ (topotype); 40, *monotona* C. Willemse, ♂ (Kiwi Creek); 41, *pagdeni pagdeni* C. Willemse, ♂ (Kundurambangara); 42, *pagdeni mundaе* ssp. n., ♀ (allotype); 43, *pagdeni kolombangarae* ssp. n., ♀ (allotype); 44, *flavomaculata* C. Willemse, ♀ (Dala); 45, *bougainvillea* Ramme, ♀ (Guaka). Fig. 46—47, *Bumacris* (*Cristovalacris*) *venosa* subgen. & sp. n. 46, ♂ (holotype); 47, ♀ (Bweinaniawarikiapu)